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COMPUTERWORLD

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Networking nexus

Web users gain view of key management data

By Patrick Dryden

Two tool kits slated to debut at Networld/Interop '96 in Atlanta next week will make management data available across the Web to any manager with a browser, instead of only to a complex console, sources tell *Computerworld*.

Translation software from Epilogue Technology and SNMP Research International, Inc. will let managers anywhere on any platform tap in to the wealth of Simple Network Management Protocol data embedded throughout their network environment.

Web, *page 16*

Switch options multiply, driving user costs down

By Bob Wallace

At Networld/Interop, Cisco, Cabletron and Ipsilon Networks will invade one another's turf with a slew of options for better, cheaper network switching, *Computerworld* has learned.

Cabletron Systems, Inc. will target Cisco Systems, Inc. with a low-end switch, and Cisco will respond with a high-end switch to compete with Cabletron's. Cisco will also announce a switching scheme to rival Ipsilon Networks, Inc.'s Internet Protocol Switching.

Although the prod-

Switches, *page 16*

For show information, check out the **Networld/Interop Web site** *at www.interop.com*

Intranets get 'pushy'

Intelligent agents limit Web wanderlust

By Kim S. Nash

Not-so-secret agents are popping up from a handful of vendors to help IS fight Web wandering by users who get lost on company intranets.

Intranets are a paradox: They can help some users get data faster, but they can be a real productivity buster for others.

An inventory intranet, for example, may reduce the routine questions warehouse managers get about what is in stock. But making salespeople search an unfamiliar intranet to find out how many brown leather golf bags are at the Camden, N.J., warehouse can eat into time otherwise spent signing deals.

Careful intranet design is one way to reduce World Wide Web wandering (see chart). But so is a means of information delivery known as the "push" model.

Automatically pushing relevant data to end users — via electronic mail or even personalized, dynamic home pages — saves users from having to search for data on their own.

"It's the way of the near-future," said Jerrold Grochow, a consultant at American Management Systems, Inc. in Fairfax, Va.

"We've heard about intelligent agents for years now, but with intranets, we will see it happen," he said.

Intranet musts:

- Look-and-feel templates
- Search options on every page
- On-screen maps
- Short, ongoing training sessions

On the table

A handful of companies are expected to ship push products late this year or early next year. They include the following vendors:

- **Cognisoft Corp.**, a start-up in Redmond, Wash., confirmed that it will ship in January a package that scans corporate databases, documents, the Internet and other data repositories for the information users want. The IntelliServ package then sends the information to users via E-mail, Hypertext Markup Language docu-

Intranets, *page 123*

WHAT'S INSIDE

- Internet congestion is spurring companies to develop special online carpool lanes. **See story, page 6,** *by Randy Weston and Mitch Wagner.*
- The National Hockey League is skating into cyberspace in a joint venture with IBM. **See story, page 8,** *by April Jacobs.*
- BankAmerica has launched an independent technology unit to help it get products to market faster. **See story, page 12,** *by Thomas Hoffman.*

Directory blocks NT move into enterprise

By Laura DiDio

Microsoft Corp.'s Windows NT Server is undeniably gaining ground as an applications server. But its lack of a full-blown directory service has left corporate America largely committed to Novell, Inc.'s NetWare as the primary enterprise network operating system.

A dozen customers contacted by *Computerworld*, as well as analysts, consultants and systems integrators, said NT Server usage is on the upswing. But the domain directory structure in Windows NT hampers management and scalability and makes the platform a "no go" for the enterprise (see related story, page 123). Conversely, Novell Directory Services for the enterprise has become the crown jewel of the NetWare 4.x platform.

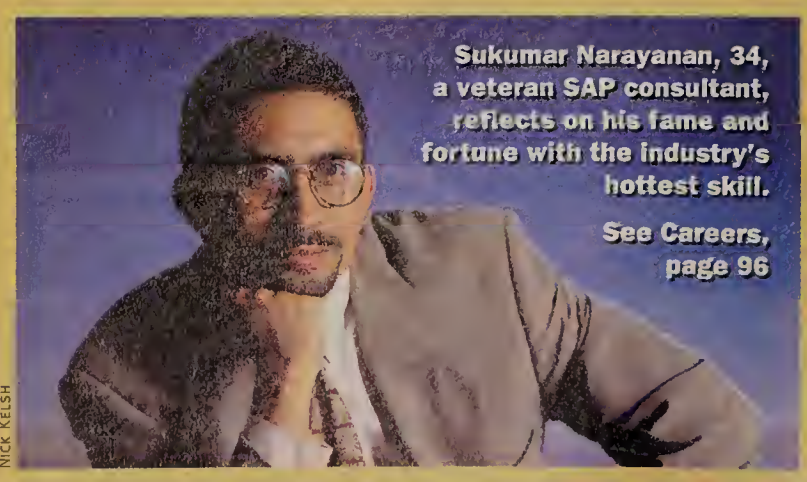
Enterprise servers

"It's a real hindrance. NT Server has a rudimentary implementation that severely limits my ability to view network resources and access information about literally thousands of users," said Gary Wilkerson, program and external services administrator at Kaiser Foundation Health Plan, Inc. in Atlanta.

Win NT, *page 123*

Newspaper

SAP: Ticket to $uccess



Sukumar Narayanan, 34, a veteran SAP consultant, reflects on his fame and fortune with the industry's hottest skill.

See Careers, page 96

Nick Kelsh

Up Front

Nasty surprises

School lockers and nasty surprises are big topics at my house these days. Of all the things that might obsess my sixth- and 10th-grade daughters during the first week of school, all they talk about is their lockers. You see, the little one got assigned a full-size locker, while her older sister got stuck with a puny, pint-size half-locker. "Is this fair?" cried the sophomore. "Who promised you fair?" shrugged the sixth grader.

Users of Micron's Millennia TransPort notebook PC probably feel closer to my sophomore's dismay these days. They recently discovered a nasty surprise feature in their systems (see story, page 6). If the machine is inserted in its docking station while its power is suspended, it shuts down for up to 24 hours.

"You might not even know that your computer is on but in the suspended state," says Glenn Roberts, a senior principal engineer at Mitre in McLean, Va. Roberts' boss recently found that out when he left his TransPort notebook docked in suspended mode a few hours before he had to take it on a business trip. Surprise! No power.

Also on the nasty surprise list this week are the "hostile applets" that are causing ripples in corporate IS shops (see stories, pages 54 and 68). Companies such as Boeing and the U.S. Defense Intelligence Agency have gone so far as to ban users from downloading Java applets from the Web.

Fortunately, there are plenty of sensible remedies to fix or cope with hostile applets (see chart, page 54), such as setting up a secure repository on a machine not connected to your network.

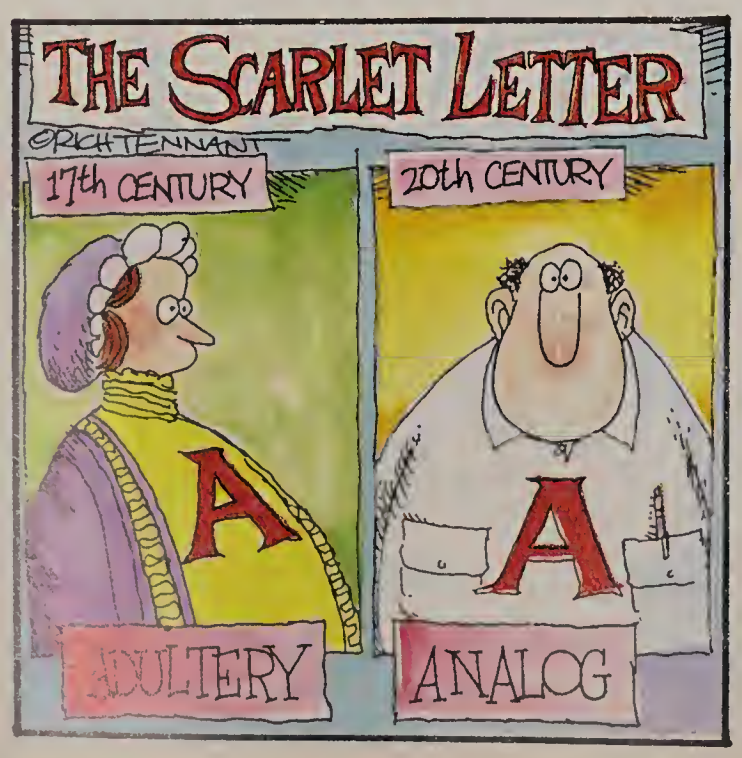
And since we're talking networks, let's not overlook this nasty surprise candidate: Windows NT Server. As our Page 1 story details, users have found that the current domain directory structure in NT hampers management and scalability — which makes the Microsoft platform a "no go" for the enterprise when compared with Novell's NetWare (see related story, page 123).

"I've got a huge investment in NetWare," one user points out. "What do I gain by ripping it out and switching to NT Server?"

Kind of like trading in the big locker for the half-pint model — and even my sixth grader knows better than to fall for that.

Maryfran Johnson, Executive editor
Internet: maryfran_johnson@cw.com

The 5th Wave by Rich Tennant



Apple beefs up server offerings

By Lisa Picarille

Reaffirming its commitment to enterprise customers, Apple Computer, Inc. will kick off the fall by dishing up workgroup and network servers and showing off a prototype of its first SMP server at this week's Seybold Publishing show in San Francisco.

Additional power

The computer maker's new systems — the Mac OS-based Workgroup Server 8550/200 and 7250/120 and the AIX-based Network Server 700/200 — offer Macintosh users more processing power and a defensible reason to stick with the Macintosh as an enterprisewide platform.

The servers come just as reports are resurfacing that some corporate accounts are dropping the Macintosh.

The latest addition to Apple's Network Server family is based on a 200-MHz 604E PowerPC processor. The system, aimed at the publishing, entertainment and education environments, starts at $16,129 and is due next month.

For users of the existing Network Server 500/132 and Network Server 700/150, a 200-MHz CPU Upgrade Card is also expected later this year.

The Cupertino, Calif., company is also prepping a symmetrical multiprocessing (SMP) network server. Apple's first SMP server system is due early next year and will feature two 200-MHz PowerPC 604E chips.

The Workgroup Servers, due later this month, include the Workgroup Server 8550/200, with a 200-MHz PowerPC 604E processor, and the Workgroup Server 7250/120. The Workgroup Server 7250/120 will cost between $2,799 and $3,649; the 8550/200 is expected to cost between $5,799 and $7,399.

News Shorts

IBM, Acer talk PC turkey

IBM is in serious talks with Taiwan's Acer Group to sell Acer-built PCs under the IBM logo, according to sources familiar with the talks. IBM officials wouldn't confirm the discussions, but officials at Acer said the two companies are talking. Under the proposed $2 billion deal, Acer would build consumer PCs for IBM, which has struggled in that market, sources said.

PointCast upgrade set

PointCast, Inc. in Cupertino, Calif., today is due to announce an upgrade to its PointCast Network screen saver for collecting news from the Internet. The company is expected on Oct. 15 to outline plans to add audio and video capabilities to its text-only news feeds. New to PointCast Network 1.1, is a compression feature that cuts by half the amount of bits sent across the Internet. Version 1.1 also lets users customize the categories of news to be received.

IS on hurricane alert

The third major hurricane of the season struck Cape Fear, N.C., with winds up to 120 mph. As of noon last Friday, there were 28 active alerts filed by subscribers to **Comdisco Disaster Recovery Services** in Rosemount, Ill., company officials said.

Cabletron supports app

Cabletron Systems, Inc. this week will help users of its Spectrum network management platform take care of systems and applications by selling and supporting AppControl, a policy-based applications manager for Unix systems. The new version adds options for monitoring system tasks, distributing software and tracking Web server functions. AppControl costs $15,000.

City repeals Internet tax

The **Tacoma, Wash., City Council** last week repealed a 6% sales tax on Internet service providers' gross receipts. Opponents argued that the tax, which would extend a telephone line tax to Internet providers, is already being paid because the providers and their customers use phone lines.

Web ad income soars

World Wide Web advertising revenue soared 83% in the first half of the year, and the Internet is on track to become a $5 billion-per-year commercial medium by 2000, according to research firm **Jupiter Communications, Inc.** Ad spending totaled $71.7 million in the first half of the year and will balloon to $312 million for the year as a whole, Jupiter officials estimated last week. The firm forecast near-triple-digit annual growth for next year.

Bay buys modem maker

Bay Networks, Inc. in Santa Clara, Calif., last week bought LANCity Corp., an Andover, Mass., cable-modem maker for $59 million. Internetworking companies are eyeing the cable-modem business. Only 25,000 cable modems are in use, but analysts expect the market to grow to more than 1 million in the next few years.

Lotus ships E-mail ware

Lotus Development Corp.'s Soft-Switch division shipped Mail Monitor 2, software that tracks message flow among different electronic-mail systems. It costs $15,000. Soft-Switch has also revised its X.500 directory plans; it has changed the product name from Lotus Pages to the Soft-Switch Directory Publisher.

'net browser chokes

Microsoft Corp.'s Internet Explorer 3.0 is choking on Java applets that will work with other World Wide Web browsers. Microsoft last week said Explorer 3.0 can't run applets whose files have names that don't exactly match their contents, and that some Version 3.0 users who upgraded from beta versions of Explorer may encounter errors caused by missing Java class libraries. Users can download those libraries at www.microsoft.com/java.

SHORT TAKES **PeopleSoft, Inc.** last week purchased **Red Pepper Software, Inc.**, a maker of supply chain management and scheduling software. . . . **MCI Communications Corp.** has won a $400 million, three-year contract to provide network switching and management services to the Defense Information Systems Agency worldwide. . . .

Novell, Inc. will unveil GroupWise 5.0, its upgraded electronic-mail and groupware product, in New York this week.

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(From left: Ralph Merkle, Martin Hellman, Whitfield Diffie)

These men invented *public-key cryptography 20 years ago. They're still waiting for the payoff.*
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Choice Cuts

Closer ties to the Internet and Windows 95 *are the strong points in NT 4.0. Lack of Plug and Play and inadequate documentation are drawbacks, a hands-on review shows.* **Buyer's Guide, page 89**

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"Don't hire another CEO. Put yourself on the block while you still can." His most likely picks for buyers - Netscape, 3Com, Cisco or EDS. **See page 125**

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Keep the traffic moving

Reserved bandwidths help clear congested intranet arteries

By Randy Weston and Mitch Wagner

Virtual carpool lanes reserved for corporate intranet traffic are popping up on the Internet. Vendors hope the reserved bandwidth will speed up the flow of priority transmissions through the increasingly sluggish global network.

For example, PSInet, Inc. in Herndon, Va., this week plans to introduce a premium corporate Internet service said to provide improved throughput and availability compared with standard Internet service, *Computerworld* has learned.

And Diamond.Net, a St. Louis start-up, is building an Asynchronous Transfer Mode (ATM) network designed to skirt the Internet's congested main hubs — the Metropolitan Access Exchanges and network access points.

Avoiding those hubs enables information sent on the Diamond.Net backbone to travel 30% faster, said Andrew Gladney, president of Diamond.Net. Using ATM technology increases the speed another 40%, he said.

Diamond.Net offers its service at a standard rate; PSInet charges an additional premium of about 25% for the dedicated bandwidth service.

"As the uses of the Internet are increasingly discovered by businesspeople, they are demanding these kinds of services," said Brian Sroub, vice president of marketing at Hearst New Media Technology, a division of Hearst Corp. "When both coasts are at work, those are really peak hours. Whatever we can do to maintain the [level of] service at that time, we'll do. We don't want to have an AOL [blackout] situation [CW, Aug. 12]. We'll be very happy to see that not happen as we try to get the medium going."

Analysts agreed the offerings are a small step toward an end that Internet industry observers have foreseen for months: premium service that will offer guaranteed throughput for high-priority traffic.

What guarantees?

"It's being driven by business needs," said Jay Pultz, an analyst at Gartner Group, Inc. in Stamford, Conn. "Although the Internet can get you anywhere and everywhere, the problem [for businesses] is guaranteed levels of service."

The new PSI Intranet service tackles that issue by guaranteeing a user space on PSInet's international switch network. The company will give priority treatment to PSI Intranet traffic, which PSInet said will improve performance — but it won't offer any guarantees on performance.

Most of PSInet's competitors offer "virtual private Internet" services in which subscribers share the Internet service provider's router network with the other high- and low-priority traffic the provider carries, said Jeffrey Shapard, senior product manager of corporate services at PSInet. By comparison, the PSI Intranet traffic will ride on a portion of the PSI network devoted only to PSI Intranet traffic — like a carpool lane on a highway, in which fewer cars are allowed in the lane so traffic moves faster.

Diamond.Net guarantees service only along the routes it manages. A transmisson that leaps onto another carrier's backbone isn't guaranteed. Gladney said he promises customers that if any section of the Diamond.Net network reaches 30% sustained usage, the company will increase the bandwidth, either by upgrading its own network or leasing more space from another vendor.

Bandwidth isn't an issue for Peters Securities, a fledgling online stock trading firm. But it was important that the company sign with a service provider that could guarantee enough bandwidth to meet the company's immediate needs and that also could adapt quickly to the company's growth.

"Big companies can't change on a dime," said Trevor Wisniewski, Peters Securities' MIS director. "We set up with Diamond.Net because we can have a reliable intranet or Internet backbone."

The price of service

Company	Service	Cost per month
Diamond.Net	T1	$1,300
PSInet Intranet	T1	$2,895*

*PSInet's standard T1 connection is $2,295

Lane-jumping woes

One of the biggest performance problems faced on the Internet comes about because most traffic on it doesn't stay on a single Internet service provider's backbone — it travels between two or more of the 100,000 networks that comprise the 'net.

Performance agreements among the largest Internet service providers could help alleviate that problem, and the providers are working toward just that. They are talking among themselves to try to guarantee performance to users for messages traveling among their networks. Those providers include BBN Planet, MCI Communications Corp., Sprint Corp., PSInet and ANS, an America Online Company [CW, May 27]. The vendors expect the talks to see fruition by year's end. — *Mitch Wagner*

Micron's notebooks leave some users in suspension

By Justin Hibbard

Some users of Micron Electronics, Inc.'s Millennia TransPort notebook are finding themselves frozen out thanks to a nasty surprise feature in their systems. If the notebook is inserted in its docking station while its power is "suspended," the system shuts down for up to 24 hours.

Mobile computing

A label on the MicronDock docking station and instructions in the documentation warn users not to dock the system while it is on. Nevertheless, several users have inadvertently docked the system while it was suspended — a state in which the screen dims and the system partly shuts down to conserve power.

"You might not even know that your computer is on but in the suspended state," said Glenn Roberts, senior principal engineer of information technology architecture at Mitre Corp. in McLean, Va. Roberts said his supervisor recently rendered a TransPort notebook useless by docking it in suspended mode a few hours before a business trip.

"This is going to give us pause unless they fix this problem," Roberts said. "I know that if you bought this, within a week, 10 people would have done this."

It took less than a week for Ted Coolidge. "I did it almost as soon as I owned the thing," said Coolidge, a technical support engineer at PowerSoft Corp. in Cambridge, Mass. Although he read the warning, Coolidge docked his suspended notebook while he was distracted. "I guess I spaced out," he said.

Computerworld is also a user of the Micron laptops.

Micron employees offered various explanations for the problem. Notebook manager Andy Condon, the most senior employee who spoke to *Computerworld*, said a controller on the motherboard was responsible.

Self-protection

"The controller controls all the power management on the system and shuts down to protect itself," he said. When asked why it took 24 hours for the controller to recover, Condon replied, "It wasn't intended in the original design to handle that situation."

Condon said Micron revised the controller after the notebooks began shipping. The TransPort models now shipping contain a controller that causes the system to turn off if it is hot-docked. The notebook can then be turned on immediately, though data not saved to disk is lost. Condon said it is impossible to determine how many notebooks shipped with the old controller.

Lamont Loveland, the PC engineer overseeing notebooks at Micron, offered a different explanation. He said the TransPort's BIOS software causes the system to shut down when excessive electricity enters from the docking station. "It's a protection in the BIOS to protect [the notebook] from losing anything," he said. The BIOS, which is made by Phoenix Technologies, Inc., takes 24 hours to recover, Loveland said.

The TransPort's inability to connect seamlessly to a docking station isn't unusual, Loveland said. "There's not a system out there today that can do hot docking," he said. The next version of the TransPort's docking station, the MicronDock, will use Intel Corp.'s 380 Dock Set chip set, which enables hot docking.

On the road

Mobile Insights says 68% of mobile workers plan to use a laptop as their primary PC by the end of next year.

Officials at Compaq Computer Corp., Toshiba America Information Systems, Inc. and IBM disputed Loveland's statement. All three companies said their notebooks support hot docking, which lets a notebook running applications plug into a docking station.

"We've been doing hot docking for a year and a half now," said Kevin Clark, product manager of mobile computing at IBM. IBM's ThinkPad Dock II, SelectaDock I and SelectaDock II offer hot docking for the ThinkPad 755 series and higher.

Jerry Perdy, an analyst at Mobile Insights in Mountain View, Calif., said hot docking will soon be indispensable. "The ability to hot dock, so that you don't change but the system adapts to you, is going to be really critical," he said.

Developer/2000™ Beats Visual Basic in InfoWorld Tools Comparison

The rigorous InfoWorld Product Comparison recently tested Oracle Developer/2000 and Microsoft Visual Basic to find which one "wouldn't crack under the pressure of scaling to the enterprise." After a battery of tests, InfoWorld concluded: "Our standout winner, Oracle Developer/2000..."

INFOWORLD

InfoWorld Product Comparison Score

Enterprise Development Tools

	Oracle Developer/2000	**Microsoft Visual Basic**
InfoWorld on Scalability	"Developer/2000 performance... convinced us that it was prepared to scale..."	"...Visual Basic just didn't have... scalability."
InfoWorld on Team Development	"Developer/2000 leads the pack in data-repository-based development."	"We feel this is an area where Visual Basic needs work."
InfoWorld on Database Programming	"Developer/2000 is packed with tools that make it the strongest... in transaction building."	"Visual Basic... transaction-building capabilities weren't ready for enterprise-wide applications."
InfoWorld on Reusability	"We were quite impressed with the wide range of object-reusability tools offered by Developer/2000."	"...Visual Basic's object reusability features (are) inefficient and tedious."
InfoWorld on Productivity	"... Developer/2000 is packed... for productivity. Developer/2000's most notable tool... is its unique drag-and-drop application partitioning capability."	"...Visual Basic... lacked the perks provided by Developer/2000."

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InfoWorld Product Comparison results as of June 17, 1996.

NHL, IBM shoot for Web success

Stats on ice

The NHL/ICE project features deployment of the following:

- IBM's real-time scoring system across all 26 league teams. It will let people access detailed, play-by-play game statistics over the Web. Instead of pen and paper, game scorers will use laptops linked to the game clocks.
- A digital library that will serve as an electronic archive that features articles, photographs and audio- and videotapes of games.
- NHL OpenNet, a Web site that will feature real-time scoring, event coverage and merchandise. It will be open for the 1996-97 season and will be enhanced throughout the year.

— April Jacobs

By April Jacobs

With professional hockey's 80th season around the corner, IBM and the National Hockey League (NHL) are skating into cyberspace with a joint venture to deliver hockey games and paraphernalia to fans worldwide.

Over the next year, the NHL and IBM will set up an online scoring system — just one part of the NHL Interactive Cyberspace Enterprises (NHL/ICE) project. A World Wide Web-based service will let fans watch cybercasts of games, search for information on their favorite players and purchase merchandise.

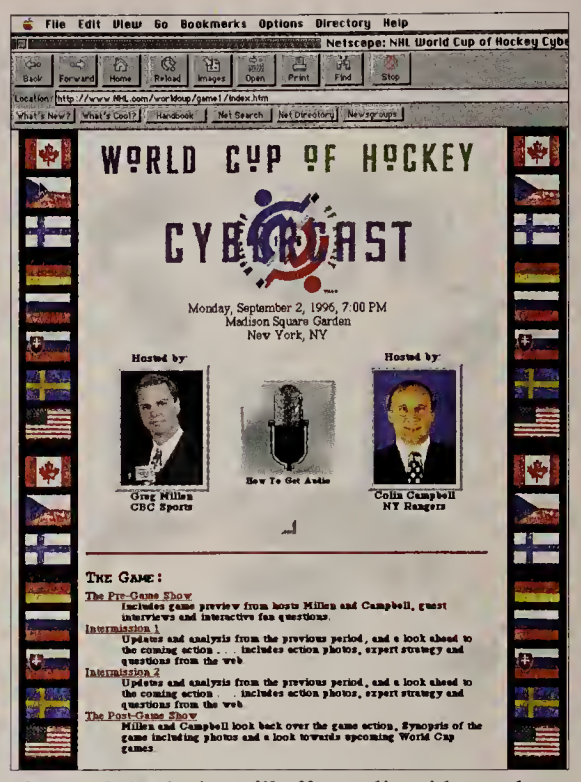
A digital library of audio and video clips will be put online over the next two years.

The NHL, long viewed as less savvy than other professional sports leagues, wants to use the online venture to update its image and expand its presence into the international arena.

Fresh off its stewardship of the Atlanta Olympic Games, IBM plans to make money from the NHL venture via access fees on a Web-based hockey information service and commissions on NHL merchandise sold online.

IBM already provides scoring and Web sites for the Professional Golfers Association and servers and data mining for the National Basketball Association.

Trying to win new fans and make money on the Internet may be the latest trend in sports. The Dallas Cowboys late last week announced an Internet offering designed to allow fans to see games and get information about the team.



The NHL's Web site *will offer audio, video and statistics to fans and team coaches*

Hockey analyst and SportsChannel commentator Stan Fischler said NHL/ICE is in line with NHL Commissioner Gary Bettman's plan to spread the gospel about hockey and bring more attention to it.

"It's more indirect than direct," Fischler said. But he added that "this whole project is going to put the NHL a little bit above the competing sports," including football, baseball and basketball.

Bettman said fans want more audio, video and statistics, which they will get from the site (www.nhl.com).

Coaches can also use the system to their advantage, NHL Chief Operating Officer Steve Solomon said. They will be able to pull down playbacks of games to focus on players' strengths and weaknesses. And the scoring system — a paper-and-pencil operation since 1917 — will be updated to provide useful details.

"We needed to have a system with hockey smarts . . . and give our teams statistical data they could use," Solomon said.

Out of the penalty box

The NHL will contribute content and its name; IBM will build the system, providing hardware, software and technical investments that cost millions of dollars, officials said. The setup will include laptops for the scoring system, IBM's digital library technology and its Global Network Services.

The project could offer a touch of redemption to IBM, which is only now emerging from the penalty box after technical and planning snafus derailed some of its systems at the Olympic Games in Atlanta this summer. A successful deployment for the NHL could be an image booster, and Bettman said he has full confidence in IBM, which first showed him a prototype almost two years ago.

IBM and the NHL will make sure everything works before the system is rolled out, said Bettman, who added that he wants to see it in operation before the start of the next hockey season.

Visa ceiling bars foreign programmers

Doors reopen with fiscal year, Oct. 1

By Sharon Gaudin

Intersoft Technologies, Inc. is up against deadlines for two software contracts, but the foreign programmers it hired to do the job can't get into the U.S.

Without the three workers, Intersoft may miss its first deadline and face a $200,000 late fee.

For the first time ever, the number of professionals seeking temporary work visas in the U.S. exceeded the annual cap of 65,000 before the end of the fiscal year.

Applicants must wait until the beginning of the next fiscal year — Oct. 1 — to restart the visa application process. Many high-tech companies that depend on immigrant workers have been left to cool their heels and lose money.

"We are losing business," said Rajan Zambre, CEO of Intersoft, a Westford, Mass., networking and videoconferencing company. "We already have hired these people, so we can't go looking for new workers.... And I can't even go after new projects to make up the losses because I'm short of staff," he said.

Although the H-1B visas are being shut down for only five weeks, Zambre said he can't get his workers into the country until late October or early November because of red tape.

"Just getting a visa is not the end of the story," he said. "A month of [government] delay ends up being two months of delay for us."

Intersoft's CEO Rajan Zambre: *'A month of [government] delay ends up being two months of delay for us'*

The H-1B visas cover all types of professionals, from computer specialists to fashion models. About 2,500 of the 55,000 H-1B visas granted last year were for computer specialists, mostly programmers.

"A lot of these international workers possess a lot of the newer skills, like those for C++ and top Unix technologies," said Paul Johnston, an analyst at International Data Corp. in Framingham, Mass.

Now that the cap has been reached, companies have to decide whether to hire someone less qualified or wait to hire the best talent from abroad, Johnston said.

Critics say hiring low-cost foreign programmers under the H-1B program displaces U.S.-born programmers at software vendors and corporate information systems departments [CW, Dec. 4, 1995].

A spokesman for the Washington-based AFL-CIO labor union said he hopes the cap will motivate companies to look for help in their own backyards instead of searching for cheap foreign labor.

Less than 1% at Intel

Businesses such as Intel Corp. countered that they only hire foreign computer specialists to get advanced skills that aren't available in the U.S. The Silicon Valley company hired about 10,000 employees in a job spurt last year, but fewer than 100 were immigrants, according to Intel officials.

Johnston said the five-week visa stall may make companies consider more offshore software development. "They need to prepare for next year in case those five weeks jump to two or three months," he said.

Ed Yourdon, a New York-based software consultant and author of *The Decline and Fall of the American Programmer*, agreed. "If [companies] can find competent but much lower-priced software people in India or Russia or the Philippines, that's a big attraction," he said.

At the limit

The cap of 65,000 temporary professional work visas was set in 1991 and hadn't been exceeded until this year. In years past, requests tallied:

1992	57,000
1993	61,000
1994	60,000
1995	55,000

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Add-on tweaks Visual C++ for client/server

By Frank Hayes

Hoping to bridge the gap between C++ and corporate information systems departments, Blue Sky Software Corp. this week plans to roll out an add-on that will make Microsoft Corp. Visual C++ easier to use for developing client/server applications.

Officials at the La Jolla, Calif., company said Visual SQL 4.2, which costs $1,499 and runs under Microsoft's Windows 95 and Windows NT, adds a set of visual tools for database access and other functions. The tool set lets developers use a mouse to create data-access code, then automatically generates 32-bit Visual C++ code for applications. Those drag-and-drop tools are aimed at making Visual C++ more like Microsoft's Visual Basic and Powersoft Corp.'s PowerBuilder.

"Visual SQL brings a lot of the functionality that I've seen in Visual Basic into the Visual C++ development environment," said Ken Henderson, chief technical officer at SunOpTech, Inc. in Sarasota, Fla. "It takes Visual C++ down the path that an MIS director would want."

C++ has largely been rejected by corporate IS shops because of its reputation for producing code that is complex and difficult to maintain. But some C++ vendors continue to update their C++ visual development systems in hopes of answering those concerns. Sybase, Inc. last month announced an improved version of its Optima++ visual tool set for C++ that borrows data-access capabilities from PowerBuilder.

In July, Rogue Wave Software, Inc. rolled out an improved version of its Zapp C++ visual tool set. And IBM has beefed up its VisualAge for C++.

How successful have those efforts been? Products such as Optima++ close about 60% of the gap between ordinary C++ and visual development environments, said Chris Kwiecinski, senior systems developer at Nabisco, Inc. in Parsippany, N.J. "It's coming closer, but it's not there yet."

The C++ visual tool sets can also serve as a learning tool, even for experienced C++ developers, said Henderson, who has tested Visual SQL. "This tool generates excellent, very logical C++ code using the Microsoft Foundation Class library," he said.

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Path from Mail to Notes delayed

By Tim Ouellette

Lotus Development Corp. seems better at keeping its users in the fold than pillaging competitors' camps.

Officials at the Cambridge, Mass., company said shipment of tools for migrating Microsoft Corp. Mail users to Notes — originally promised for May — has been pushed back to later this year. Lotus has already shipped tools for CC:Mail migration.

The tools simplify the movement of user electronic-mail messages, attachments, directories and folders to a Notes system.

Stuck in the middle

Microsoft Mail shops that are considering Notes must wait or try homegrown schemes. "We are more or less in limbo," said a user at a large health systems firm, who asked to remain anonymous.

About 200 of the firm's 1,000 employees use Mail and are waiting for a smooth switch to Notes.

"I give up. I'm migrating my [Mail] users to Microsoft Exchange," said Alham Sumudra, an E-mail manager at Satelindo, a telecommunications company in Jakarta, Indonesia. Analysts said most users who move to Notes will come from Lotus' 10 million CC:Mail user base, whereas the 9 million users of Microsoft Mail are more inclined to move up to Exchange [CW, April 28].

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'net aids Red Cross

Online site kept workers updated on Hurricane Fran

By Stewart Deck

As Hurricane Fran battered the mid-Atlantic coast with 130-mile-per-hour winds and torrential rains, the American Red Cross' online technology was abuzz with storm updates and preparations.

The World Wide Web site (www.redcross.org) featured weather maps from the National Weather Center and the National Hurricane Center, along with preparation measures for violent storms and shelter information.

American Red Cross

The internal Red Cross intranet, ARC Online, flashed with news articles and alert status reports from various regions. This is the intranet's first hurricane season, and regional offices in Pennsylvania and Virginia posted information on how many vehicles and supplies they could send to hard-hit areas if they were needed.

The idea behind ARC Online is to connect each of the 1,500 Red Cross offices across the U.S. by next July so that information and updates can be passed along quickly and effectively. To date, more than 400 regional offices are part of the system. Instead of painstakingly mailing or faxing several procedure updates every week, the central office in Falls Church, Va., now posts the updates on ARC Online and the regional offices download them.

"We tried using a commercial fax distributor for sending bulletins to each office, but that became extremely expensive," said Rex Costanzo, director of systems development at the Red Cross. "Our intranet has already saved us a lot of money."

Direct contact

The Red Cross' external Web site was designed to provide direct services to people in need, increase the organization's visibility and "generate money, volunteers and blood and tissue resources," Costanzo said. Active for two years now, the Web site can accept donations by credit card.

More organization-specific information is passed along through ARC Online.

Chapter offices, paid staff and more than 4 million Red Cross volunteers can receive the ARC Online software packet that connects them to the system through HLC Internet, Inc., an Irvine, Calif., Internet service provider.

"The Red Cross already has a tremendous network of volunteers and offices. This is a way to extend that on to a computer network," said Jeff Varnes, executive director of the York, Pa., American Red Cross chapter.

In addition to disaster updates, each chapter will use the ARC Online intranet to update its policy and information bulletins, management memos and events calendars. It also keeps far-flung offices updated on technology upgrades and congressional bills that affect the Red Cross.

The most popular section of ARC Online has been the discussion forums, said Maribeth Luftglass, manager of systems development at the Red Cross. The forums have information on health and safety trends, recruitment services, biomedical and nursing issues and the status of alerts.

Mac clones may bundle BeOS

By Lisa Picarille

Beginning in January, users who purchase Macintosh clones from Power Computing Corp. may have a choice of operating systems — the Mac OS or the BeOS.

According to sources close to both Power Computing and Be, Inc., the two companies are in discussions that could result in a BeOS bundle on all of the Round Rock, Texas, computer maker's systems.

"The deal is imminent," claimed one source briefed on the talks.

Jean-Louis Gassee, Be's chairman and CEO, confirmed the talks but said, "We have not reached a definitive agreement."

Big steps

Power Computing had previously helped Be port the BeOS from the proprietary BeBox hardware to the PowerPC chip. The two companies demonstrated a version of the BeOS running on a Power Computing machine at Macworld Expo/Boston in August.

But a bundling deal would take the relationship a step further and offer Be some leverage and distribution clout for its upstart operating system. Power Computing reportedly has sold more than 130,000 units since its first Macintosh-compatible debuted a year ago, according to industry sources.

BeOS' advantages over the current version of Mac OS

- Multithreaded
- True pre-emptive multitasking
- Support for symmetrical multiprocessing
- Object-oriented for easy application development

Users who saw the Macworld demonstration of the BeOS running on Power Computing's Macintosh clone were impressed, but skeptical of a new operating system.

"I was kind of surprised that someone would come out with another operating system," said Joel Kitchen, Macintosh network coordinator at Publix Super Markets, Inc., a grocery store chain in Lakeland, Fla. "It's a gutsy move on Be's part. I hope they are successful. The more competition the better it is for users. Up to now, it's been a two-horse race."

In addition, the exposure from a deal with Power Computing may cause Apple Computer, Inc. to take a closer look at the BeOS as a viable alternative to its struggling Mac OS effort [CW, Sept. 2].

Apple's interest

The BeOS offers a host of things that Apple's next-generation Copland operating system was supposed to deliver before it was scrapped in favor of a new operating system release strategy. Because of that, Apple has expressed interest in acquiring the BeOS, according to sources inside Apple.

"I don't know why Apple doesn't just buy the BeOS and call it Mac OS 8 and be done with it," said Dave Winer, a longtime Macintosh developer who is committing resources to create Windows and BeOS versions of his Frontier scripting language.

For more information on what Be brings to the operating system party, with or without Apple, see www.computerworld.com.

Bank America branches out

Subsidiary to develop reusable object templates for financial firms

By Thomas Hoffman

BankAmerica Corp. last week created an object-oriented software development subsidiary to help it bring bank products to market faster.

The 15-person unit, called Concorde Solutions, Inc. in Concord, Calif., will develop reusable object templates for the bank and for possible resale to other financial service companies.

BankAmerica's Marty Stein *says object technology will help the bank 'be a leader' in new product development*

Marty Stein, BankAmerica vice chairman and technology chief and chairman of Concorde, said the subsidiary plans to use cutting-edge object tools to help the bank become a leader in developing new financial products and services. The first two internal applications are expected in mid-1997.

BankAmerica has invested "a few million dollars" to form Concorde, said Isaac Applbaum, the subsidiary's president. The investment is separate from BankAmerica's $1 billion-plus annual information systems department budget.

Driving force

There are several business drivers behind Concorde's flight. For instance, the "massive" maintenance workload for BankAmerica's legacy systems makes it difficult for the bank's programmers to develop new systems and products quickly, Applbaum said.

To attract the industry's top object developers, San Francisco-based BankAmerica also wanted to create an entrepreneurial setting that wouldn't spook "T-shirt-and-jeans programmers from working for a Fortune 500 company," Applbaum said.

He also said the two organizations will share work on some projects to ensure Concorde's staff isn't completely polarized from BankAmerica's IS group.

For Concorde to succeed, BankAmerica "will have to embrace the unit and not leave these guys dangling out there like a bunch of kooks," said Art Gillis, president of Computer Based Solutions, Inc., a Dallas-based banking consultancy.

Gillis and other analysts pointed to Citibank as a noteworthy example of a bank that tried — and failed — to launch an independent technology unit a few years ago.

One of Concorde's first internal projects is to build a relationship management system for corporate or wholesale customers. BankAmerica already has several IBM mainframe-based wholesale systems to support its customers, but the character-based IBM 3270 "green screens" severely limit the ability of customer representatives to cross-sell additional products, Concorde officials said.

The new wholesale system, which enters the pilot phase in November, will be built using IBM's System Object Model tools to connect customer service representatives to legacy data. That way if someone at, say, Coca-Cola Co. calls BankAmerica about a wire transfer, a customer representative can check Coca-Cola's portfolio for other on-the-spot investment opportunities the bank can offer, Applbaum said.

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Net computer, IBM-style

Network Station could help IS make order of network chaos

By Michael Goldberg

IBM last week introduced Network Station, a light, thin $700 machine for business users that is the company's answer to this year's network computer buzz.

Users said Network Station looks more practical than visionary — something that could, with more work, help taxed information systems managers modernize and control their unwieldy fields of corporate desktops.

Network computer

Server link

Network Station comes with Netscape Communications Corp.'s Navigator World Wide Web browser and other software that lets it send and receive information, including Java applets, from servers. The device doesn't store information or programs such as a spreadsheet. Instead, it accesses those capabilities from the server.

Users said they are interested in Network Station because managing PCs in a corporate network can be like raking fallen leaves in a stiff breeze: difficult to gain orderly control.

"Particularly when we start talking about Web browsers, that unit is clearly an advantage over PCs. We don't have to change the browser on every desk all the time. And I don't have to worry about some user adding Microsoft Golf on their system," said Kent Polzin, director of technical operations at mattress manufacturer Simmons Co. in Atlanta.

Analysts used IBM's announcement to caution against the industry hype over network computers. They said Network Station is a good replacement for the estimated 30 million dumb terminals still connected to data-entry shops that use IBM mainframes and AS/400 minicomputers.

Its potential as a powerful networking device still remains to be seen.

Java key

John Logan, an analyst at Aberdeen Group, Inc. in Boston, said Network Station's Java applet support could mean a lot a year from now. "If application development environments accept Java, as they appear to be doing, it's well-positioned to run Java applets at this low cost, and it [could] allow access to the Web for electronic commerce," Logan said.

Some software vendors are working on this now. Software 2000, Inc. in Hyannis, Mass., which sells financial and human resources software for AS/400 users, is working to put some simple Java enablement into its products for release when Network Station is available in the fourth quarter, according to company chairman Bob Pemberton.

Paul Dunn, manager of technical services at Les Schwab Tire Centers, Inc., an AS/400 shop in Prineville, Ore., said he can see the potential of using Java applets on Network Station.

"It can become a [more powerful device] using some object-oriented tools to develop applications to run on it, [such as] Java applications. The price could potentially make it worthwhile," he said.

IBM's Network Station

- **Processor:** PowerPC 403
- **Memory:** 8M bytes
- **Dimensions:** 8 in. by 10 in. by 1 1/4 in.
- **Weight:** 2.5 pounds
- **Power consumption:** Equal to 15-watt lightbulb
- **Availability:** Fourth quarter
- **Price:** $695 (monitor not included)

PC support costs bedevil IS

By Bob Francis

Frustrated by the cost of supporting desktop PCs, some information systems managers are taking a look at network computing devices as an alternative.

These devices don't seem to be affecting PC sales, but some managers are using them in place of PCs on their networks, citing lower support costs as a primary factor.

"We can use these devices for a variety of applications on the network, and yet we don't have the support costs associated with PCs," said Manual Roy, an IS manager at Blue Cross/Blue Shield of Florida in Miami.

Soft PC costs

Costs for managing a desktop PC include:	
Asset management	
Configuration	
Software upgrades	
Local and remote PC support	
Five-year cost of managing	
Desktop PC	$43,000
Network computing device	$8,000

Source: Gartner Group, Inc., Zona Research, Inc. and HDS Network Systems, Inc.

Reasons to switch

Roy cited the fact that these systems can handle legacy and PC applications and still be controlled from a central server as primary reasons for using the 100 or so network computing devices from HDS Network System, Inc. in King of Prussia, Pa. "With PCs, we have to go out to the system to make a lot of the changes," he said.

First foray

Compaq Computer Corp. first added sophisticated management features to desktop PCs in March 1995.

Last week, IBM got in the network computing device game, announcing a product designed for its AS/400 systems (see story above).

IS managers have struggled to get PC costs under control for some time. "From where I sit, the actual hardware isn't the big cost of the PC — it's getting someone to set it up and configure it and make sure it's operating right," said James McCullough, MIS director at Delta Air Lines in Atlanta.

In response, the PC vendors are planning a frontal assault on PC management costs, led by the industry's primary chip manufacturer, Intel Corp. in Santa Clara, Calif.

Intel, which has become the primary motherboard vendor to the PC industry, plans to incorporate several new monitoring and management features on future generations of its motherboards.

Motherboards are the basic building blocks of desktop PCs, housing the microprocessor and connections for the hard drive, memory and add-in cards.

Intel's counterattack

This week, Intel will announce a product that will be incorporated into LANDesk, its desktop PC management software. Scheduled for release later this year, the configuration management technology will allow IS managers to perform PC installation, configuration and upgrades over the network, even if the PC has been turned off.

This new capability should help lower the cost of PC management because most IS managers have to deploy personnel to perform these tasks on-site.

"If IS managers can do some of these tasks centrally, it should help lower their costs," said Brian Burba, an analyst at International Data Corp. in Framingham, Mass.

IBM to expand global 'net commerce services

By Mitch Wagner
SAN FRANCISCO

IBM this week plans to announce an agreement designed to enhance its ability to connect companies for international commerce over the Internet, *Computerworld* has learned.

Big Blue will announce a joint marketing and technology-sharing agreement with Global Business Alliance, Inc., an 80-person Washington company that specializes in international electronic commerce, IBM executives said.

Global Business Alliance runs the Unibex network, a global private network that uses Internet protocols. It also offers an array of services for translating data among countries' data-interchange protocols.

Global Business Alliance offers translation services for individuals as well; it translates electronic mail and other digital communications among different natural languages.

Time has come

"They've been thinking about the problem of international electronic commerce for years, since before there was an Internet," said an IBM official, who requested anonymity. IBM expects to announce the alliance at this week's Internet Commerce Expo in Anaheim, Calif., sponsored by International Data Group, parent company of *Computerworld*.

IBM declined to comment officially.

Unibex was announced 18 months ago, under the name Ibex, as an alternative to the Internet [CW, April 3, 1995]. Global Business Alliance has since been working to integrate Internet technology into the network. Global Business Alliance, which has about $10 million in capital, is backed by the U.S. Chamber of Commerce, AT&T Corp., The Dun & Bradstreet Corp., Digital Equipment Corp., Microsoft Corp. and others.

Many options

IBM officials said the company will use the Unibex network as another option for its customers. The company will be able to connect users to the public Internet, IBM's private Advantis network or the Unibex network — based on the customer's preference — in much the same way as IBM now offers multiple operating systems.

IBM last week announced an array of Internet commerce services under the umbrella name CommercePoint. They are targeted at retail sales on the Internet and business-to-business sales. The services were designed to give merchants a safe and reliable means of accepting payments, taking orders and posting product catalogs online.

America Online spam ban lacks teeth

By Mitch Wagner

It was a nice gesture, but it doesn't mean much beyond that.

America Online, Inc. last week announced that it is nailing a "Keep Out" sign on its gates, which is aimed at hucksters flooding America Online users with unwanted bulk electronic mail.

AOL, the largest online service in the country, made a high-profile statement declaring Internet junk mail unacceptable and implemented technology measures to block it from subscribers.

AOL's E-mail ultimatum has considerable publicity value. But the specific measures proposed by AOL are common practice on the Internet. And they don't work. They rely on screening out E-mail from particular addresses and domains. But spammers move around, changing addresses and domains specifically to avoid the kinds of blocks being implemented by AOL.

Spam slam

Junk E-mail is often known as "spam." It's generally believed that the name comes from a *Monty Python's Flying Circus* comedy skit, where players dressed in Viking costumes and loudly chanted "Spam! Spam! Spam!" — drowning out attempts at conversation.

"Receiving unsolicited junk E-mail is the No. 1 complaint we hear from our members," Steve Case, chairman and CEO at America Online, said in a written statement last week. The firm said it is contacting organizations that send its members junk mail to ask them to stop. The worst offenders will see their E-mail rejected by AOL's systems before it reaches users. And AOL Thursday introduced free filters designed to allow users to configure which mail to automatically reject.

The move comes as Internet users have recently been complaining more and more about junk mail — often known as "spam" — in their Internet and online service E-mail boxes. The junk mail often advertises pornography, online sex sites, cheap computer equipment and get-rich-quick schemes.

Bad for business

Experts are concerned that the flood of junk mail could drive away users — especially consumers — which would be bad for businesses that want to use the Internet and online services marketing tools for consumer products and services. That's especially a concern when children have access to E-mail, said Jeffrey Zonenshine, vice president of information technology at Century 21 Real Estate Corp. in Parsippany, N.J.

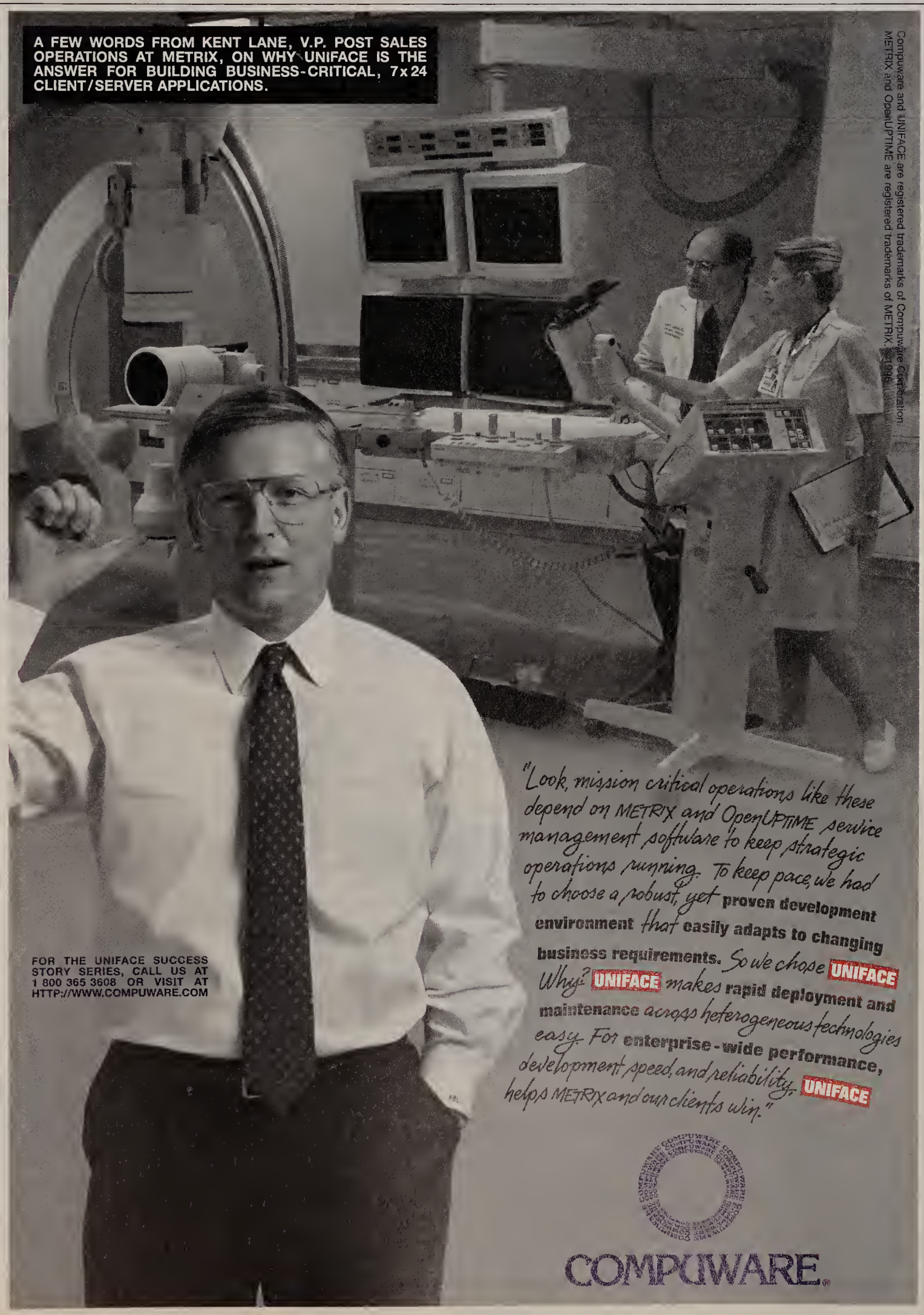
"I could see families being more restrictive and less interested in pursuing a kind of vehicle that could put them at that sort of risk," Zonenshine said. That would be bad for business at Century 21, which recently launched a forum on AOL.

Blocking E-mail from offensive domains is nothing new. This option has been available to Internet service providers and online services for years, and many take advantage of it. The tactic is so common, it even has a nickname — the "Internet Death Penalty."

For instance, The World, a Brookline, Mass., Internet service provider, blocks E-mail from eight domains. So far, no customers have asked to get the access restored, said Barry Shein, president of Software Tool & Die, which owns and operates The World.

But others have rejected blocking all E-mail from a domain as an unconscionable act of censorship.

"I'm extremely sympathetic to what AOL is doing, but [I'm] unwilling to do content control," said Glee Cady, manager of public policy at Netcom On-Line Communication Services, Inc. in San Jose, Calif.



Switch options multiply

CONTINUED FROM PAGE 1

ucts are largely proprietary and likely to primarily attract the installed base, the average user is expected to gain from the market pressure that is forcing vendors to put more features into their systems for less.

"With huge increases in traffic brought on by the Internet and the specter of that worsening with the proliferation of intranets, we need to [upgrade] our network foundations — and that's done via switching," said Bill Horst, chief at the General Services Administration's communications branch in Philadelphia.

Product announcements

Specifically, the vendors will roll out the following:

- **Cabletron's MMAC-Plus Access**, which offers all the LAN switching capabilities of its flagship switch at roughly a third of that switch's cost of approximately $20,000.
- **Cisco's data center switch**, called the Catalyst 5500, which analysts said will give Cabletron's MMAC-Plus a run for its money.
- **Cisco's Tag Switching**, an end-to-end switching scheme that analysts said is more versatile and feature-rich than Ipsilon's hot IP Switching technology.

"Cisco definitely needs to have a high-end data center switch to extend their product line," said Mike Ruhrdanz, director of engineering at the University of Nebraska in Lincoln.

He said that means he can settle on one vendor for all his switching needs rather than go with several providers and attempt to forge interoperability among proprietary products.

"I really like [Cisco's plans to enhance StrataCom's BPX WAN switch] to extend Tag Switching over the wide area. This is the result I wanted to see from the Cisco/StrataCom merger."

— Bill Horst, General Services Administration

Analysts briefed by Cisco said they expect the San Jose, Calif., company to detail plans to enter the high-end data center switching market via the Catalyst 5500.

That switch will have twice the capacity, almost three times as many slots and far higher port density than Cisco's flagship switch, the popular Catalyst 5000. No pricing information was available on the 5500.

On the opposite end of the market spectrum, Cabletron will take on Cisco with its first affordable and versatile low-end switch.

The MMAC-Plus Access offers more switching options and port density than the Catalyst 5000. Still, analysts said all the extras — such as Token Ring and Fiber Distributed Data Interface (FDDI) — may be overkill for a low-end switch.

More affordable

Users and analysts have long been critical of Cabletron's MMAC-Plus because of its high cost. "We looked hard at the MMAC-Plus but just couldn't afford it," Ruhrdanz said.

But the new Access costs less than $7,000. A comparably equipped Access costs about the same as a Catalyst 5000 but offers Token Ring, FDDI and Asynchronous Transfer Mode switching.

Separately, Cisco is taking a shot at IP Switching, a technology developed by Ipsilon [CW, Sept. 2] as a backbone booster that speeds TCP/IP exchanges through networks, intranets or the Internet.

Cisco will counter with a scheme called Tag Switching, which differs from IP Switching in that it supports other protocols and lets routers talk to other routers when relaying traffic flows. IP Switching lets only routers talk to switches, sources explained.

Web users gain view of management data

CONTINUED FROM PAGE 1

Previously, managers had to go to one of a few complex and powerful consoles to check Management Information Base (MIB) data from their systems, applications and internetworking gear, which report via SNMP.

They have a jump on vendors allied in the World Wide Web-based Enterprise Management (WBEM) effort. Those vendors promise to define an interface for such a Web capability sometime next year [CW, July 22].

New outlook

"It's clear now that we must revise our view of the network management platform because the Web is taking over as the point for integrating diverse management information," said John McConnell, president of McConnell Consulting, Inc. in Boulder, Colo.

These introductions will speed the shift to direct delivery of management data to multiple platforms, said Wayne Morris, director of corporate strategy at Houston-based BMC Software, Inc., which backs the WBEM effort. "The WBEM interface will enable Web access to the SNMP world eventually, but we could take advantage of these tools right away," Morris said.

Some internetworking vendors are starting to embed Web server functions in routers, switches and hubs so managers can check or configure them remotely. But that step leaves many devices behind.

"Web access to raw statistics is nice, but users demand interpretation. They want to know how the oranges taste, not how many are on the tree."

— Lou Steinberg, president, NetOps

The upcoming translation software could help integrate older installed equipment into the new Web-based management applications, said Lou Steinberg, president of NetOps Corp., a network management consultancy in New Fairfield, Conn.

Epilogue will introduce encoding/decoding software called Decorum. The software will let OEMs provide access to standard SNMP-enabled devices through any browser, according to officials at the Sunnyvale, Calif., company.

SNMP Research in Knoxville, Tenn., will introduce the DR-Web Extensible Agent, company officials said. This software loads in any SNMP-enabled device or system, then enables interaction with MIB data from a Web browser.

In-house developers can build tools with this agent software. It should ship in November for $1,995, plus $45 per device.

Some users, however, said they don't want to deal with the raw statistics fetched from MIBs. They prefer to let vendors interpret and present the data before they see it through a browser or a traditional console.

"Web access to raw statistics is nice, but users demand interpretation. They want to know how the oranges taste, not how many are on the tree," Steinberg said.

OneTouch may simplify net diagnoses

Fluke to offer handheld testing tool

By Patrick Dryden

Fluke Corp. next week plans to introduce a handheld network test device that gives field technicians a simple tool to find problems quickly and reduce downtime for users.

The OneTouch Network Assistant does a series of automated tests for packets and wiring through an icon-based interface on a touch screen.

OneTouch Network Assistant *automatically tests packets and wiring via an icon-based interface*

This helps troubleshooters in the field diagnose connections and systems on their own, minimizing calls to experts in the central operations center.

"It sounds very helpful," said Brian Burba, a network management analyst at International Data Corp. in Framingham, Mass. "There's a raging need for simpler management tools as networks grow more pervasive and draw more users into the support process."

An extra hand

Such a tool could help Arizona Public Service Co. (APS) find and fix problems throughout its statewide network, said Mons Ellingson, leader of the network management engineering group at the electric utility in Phoenix.

"Our contract technicians don't have a lot of network experience, so they really need this help," Ellingson said. Fluke's new tool "could save time [spent] tracking the cable when the problem really lies with a server or hub."

Like many information technology groups, the central management staff at APS must cope with limited size, time and travel flexibility.

"Making tests simple for field technicians would help us so [that] we don't have to send one of our top engineers," Ellingson said.

OneTouch Network Assistant combines the most popular functions of cable testers and protocol analyzers.

It checks Ethernet connectivity between stations and servers, across segments and through hubs and routers.

A flashing icon indicates a problem source. Touching that icon displays details such as the address of a faulty component or a cable map. This allows the technician to quickly find and service a bad connector or wire flaw.

Network health statistics identify the busiest stations and top protocols in use. Tests provide details on specific stations, hubs, routers and servers. For example, a user can check the response time and other information about servers running NetBIOS, Microsoft Corp.'s Windows NT and Novell, Inc.'s NetWare.

The device also interprets statistics. It advises when collision or utilization rates are acceptable, for example, and when they should be reported to network experts for further evaluation.

OneTouch Network Assistant will be available this month for $3,695. A model priced at $4,995 will check both 10M and 100M bit/sec. Ethernet — the first handheld tester for Fast Ethernet, the Everett, Wash., company said.

That is too pricey for APS to outfit every technician, according to Ellingson. "We could check out testers or ship them to remote sites, then help with troubleshooting over the phone," he said.

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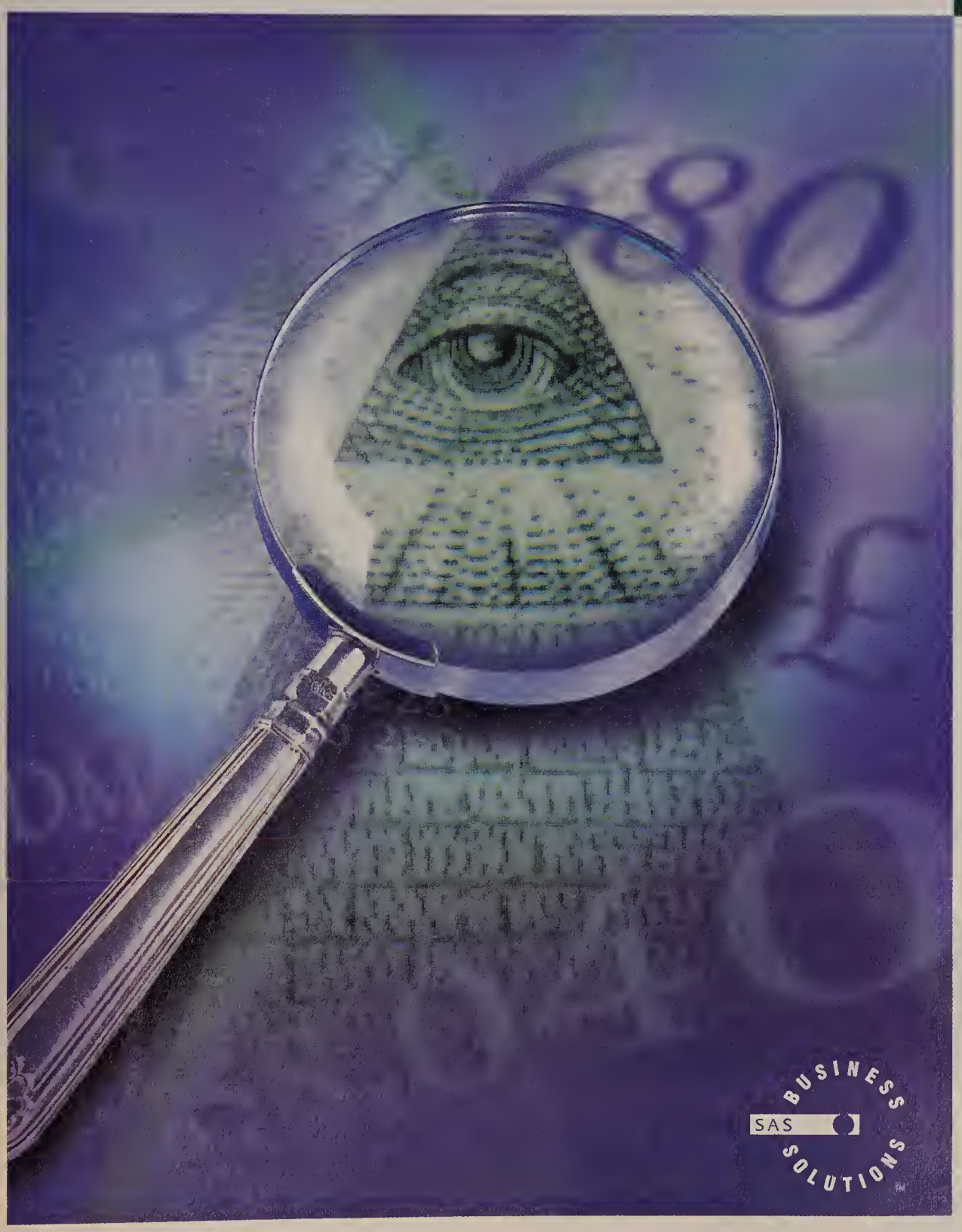

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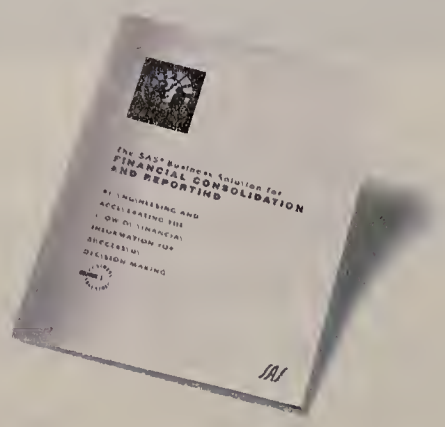

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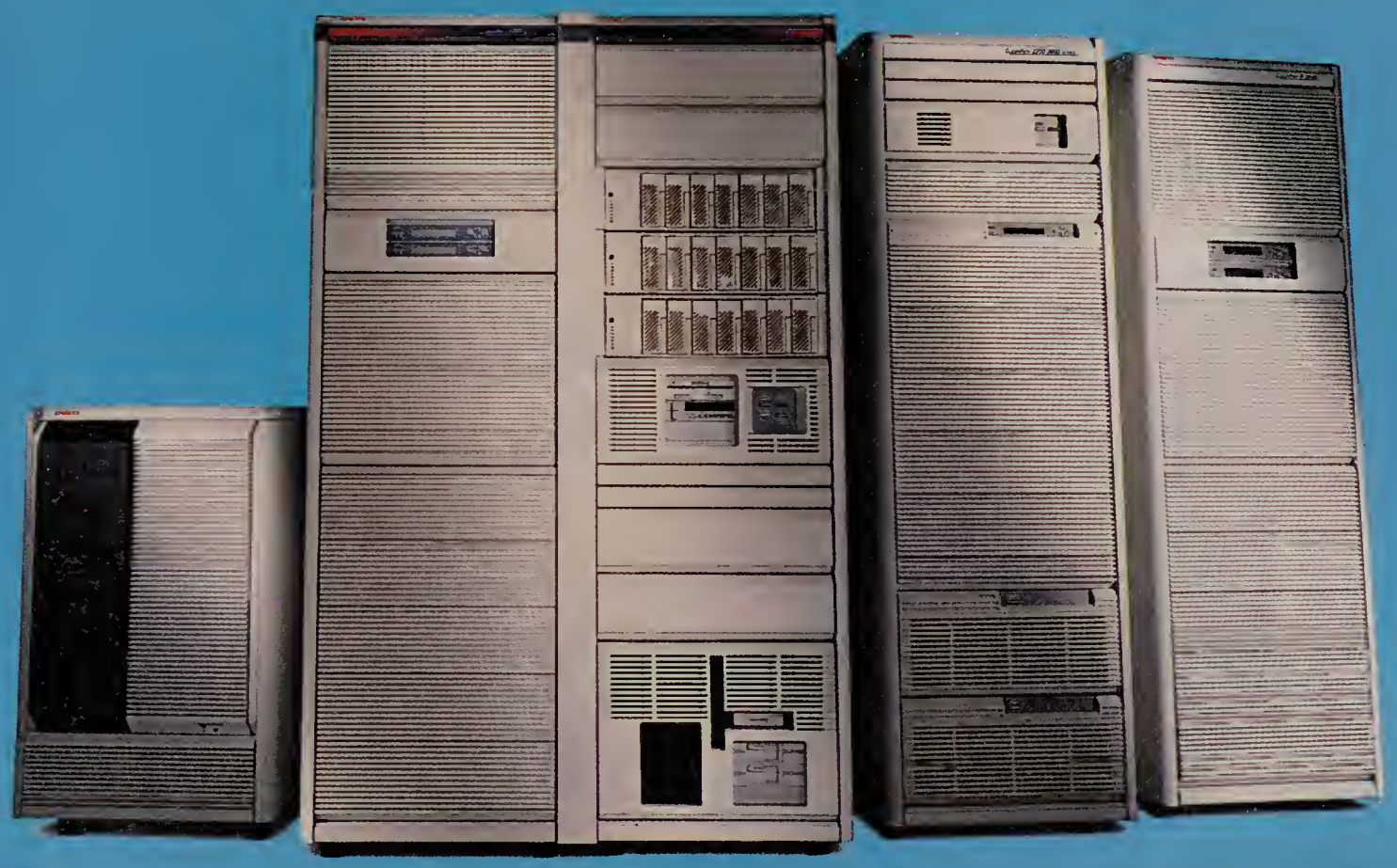

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The Information Management Company

Schools give notebooks the old college try

Campuses are instructed to replace desktops

By Mindy Blodgett

For years, "back to school" at many college campuses meant buying desktop PCs for hordes of incoming students. Now some administrators are finding it better to give students notebook PCs to add to their stack of notebooks.

This fall, all 1,000 students and 55 faculty members at Valley City State University in North Dakota went mobile with a campus-wide deployment of IBM PC Co. ThinkPad notebooks.

Valley City State followed the lead of the University of Minnesota, Crookston, which in the fall of 1993 became the first university to implement notebook use by its 1,000 students and 60 faculty members.

Acadia University in Wolfville, Nova Scotia and Wake Forest University in Winston-Salem, N.C., also are arming their first-year students with laptops.

The college deployments are part of a fledgling trend in higher education away from desktop PCs and toward portable computing, industry observers said.

"Why put money into hard-wired laboratories when students can bring portable computers into the classroom and plug their notebooks into the network for in-class use?" asked Jane Ryland, president of CAUSE, a Boulder, Colo.-based association for campus information systems managers.

Valley City State's Ellen Chaffee: *'Notebooks can do just about anything desktops can do'*

This trend is occurring in the corporate market. Giga Information Group in Cambridge, Mass., this year predicted that by 2000, one in three workers will use laptops — up from one in five today. And of those portable users, 80% will use notebooks as the primary PC — up from 30% today [CW, April 8].

"With portability, the student or teacher can use the machine anywhere," explained Ellen Chaffee, president of Valley City State. "And notebooks can do just about anything desktops can do."

To pay for the laptops, Valley City State charges its students a technology fee of $475 per semester. A $1.7 million federal grant helped to equip 12 classrooms with multimedia capabilities, including Ethernet power connections and big-screen TVs.

Payback time

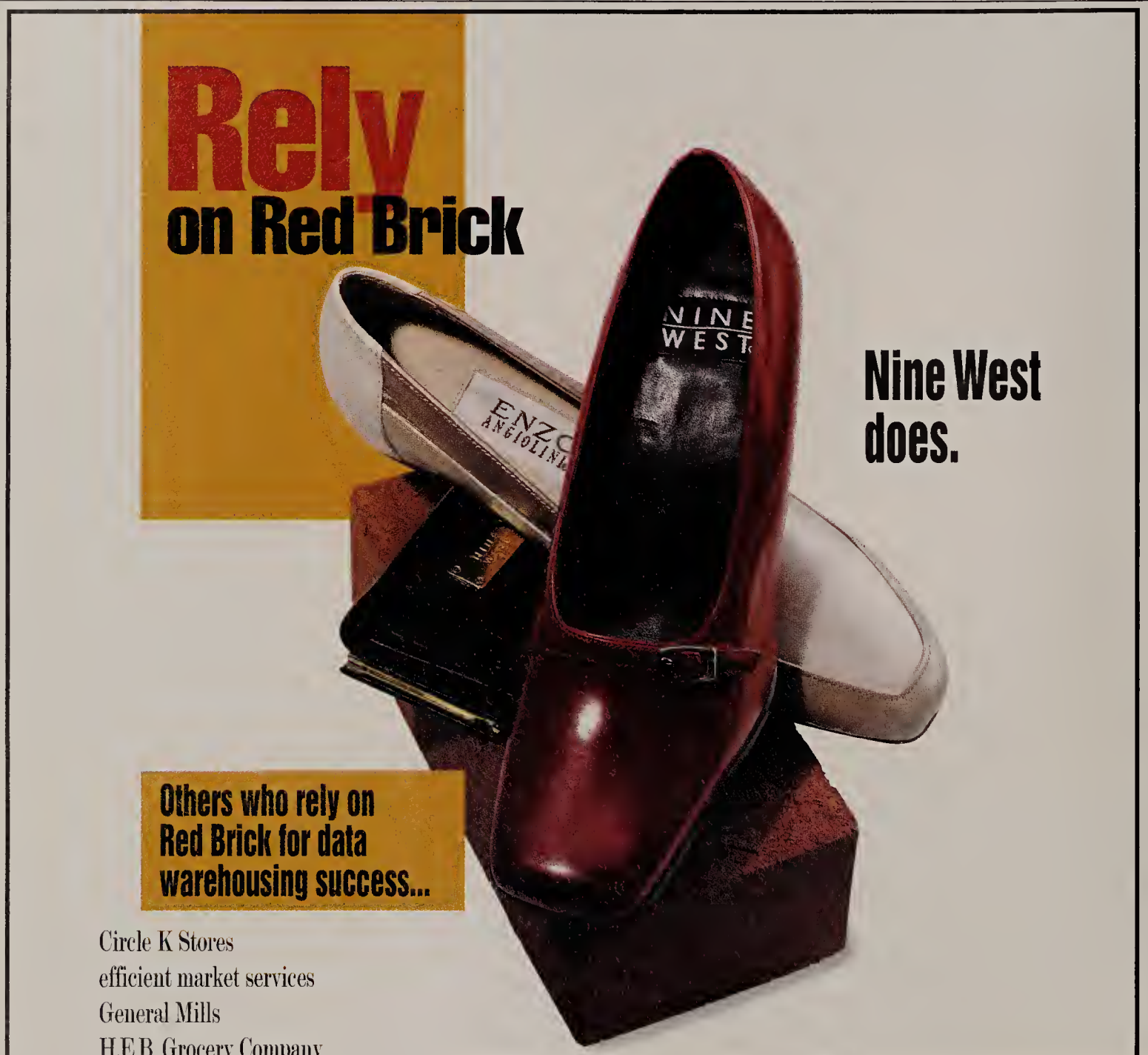
The University of Minnesota, Crookston charges students a technology fee of $900 per year to buy notebooks for the campus.

The notebooks have Windows 95, word processing, spreadsheet, database, electronic-mail and Internet capabilities. The university also set up a help desk staffed by students.

Lessons learned

Bruce Brorson, senior technology associate at the University of Minnesota, Crookston, said his institution has learned the following lessons in the past three years:

- Spend time training students and teachers on the technology before the semester starts.
- Try to standardize on one notebook. "Some faculty stayed on desktops the first year, which wasn't very helpful," Brorson said.
- Hire help desk workers with "good human skills" and technical skills. "Many callers just want to vent," Brorson said.



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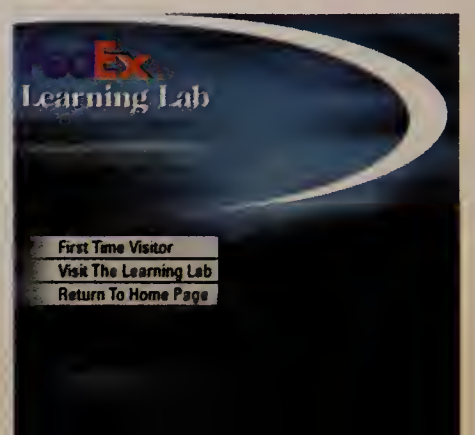

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Netscape opens Web app site

By Kim S. Nash

Netscape Communications Corp. is putting the pedal to the metal in the emerging turnkey Web package market.

The company today will unveil AppFoundry, a World Wide Web site that features free productivity, work sharing and other applications built in Java and HyperText Markup Language (HTML) specifically for Netscape's servers and browsers.

AppFoundry is intended to kick-start intranet and Web development. For example, information systems managers who want to sell the intranet to executives can download the applications for a taste of the Web.

Or, because all source code comes with the software, IS can customize the packages for quirky, in-house systems.

Lassoing third-party support is a must for Netscape, which faces an army of long-time Microsoft Corp. developers converting applications to or building new systems for Microsoft's ActiveX technology.

AppFoundry is a good start, but "it's flimsy," said Mike Kennedy, an analyst at Meta Group, Inc. in Burlingame, Calif.

The packages aren't core business applications, such as accounts receivable or inventory control.

Instead, AppFoundry offers smaller programs, such as a corporate events calendaring package and a meeting room manager, that are meant to complement mainstream financial and human resources systems, said Kevin Tsurutome, a product manager at Netscape in Mountain View, Calif.

Netscape is talking to client/server vendors such as Lawson Software and PeopleSoft, Inc. about integrating their heavy-duty business applications with Netscape Web servers and browsers, but no deals have been signed, a Netscape spokeswoman said.

Meanwhile, Microsoft has allied with client/server powerhouse SAP AG. "Netscape has their work cut out for them," Kennedy said.

Users can download AppFoundry's initial 21 packages one-by-one or wait until early next year for the next release of Netscape's Enterprise Server, which will come with the programs on a CD-ROM (see chart). Netscape plans to include 100 applications in AppFoundry by year's end.

Netscape also plans to offer some applications, though "this is not about Netscape. This is to promote our partners," Tsurutome said.

AppFoundry applications must be written in HTML or Sun Microsystems, Inc.'s Java or JavaScript. For example, Internet Media Services in Palo Alto, Calif., rewrote its Toc time tracking package in Java; the package was originally written in C.

Free-for-all

Users can download free productivity, human resources, finance and other applications built by third parties from Netscape's AppFoundry Web site

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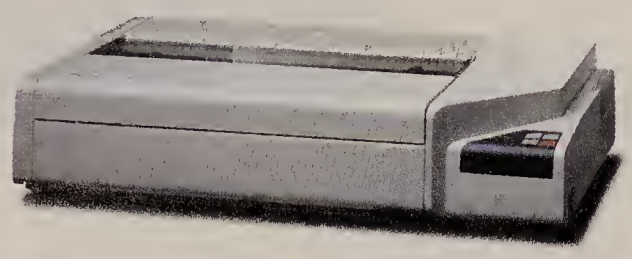

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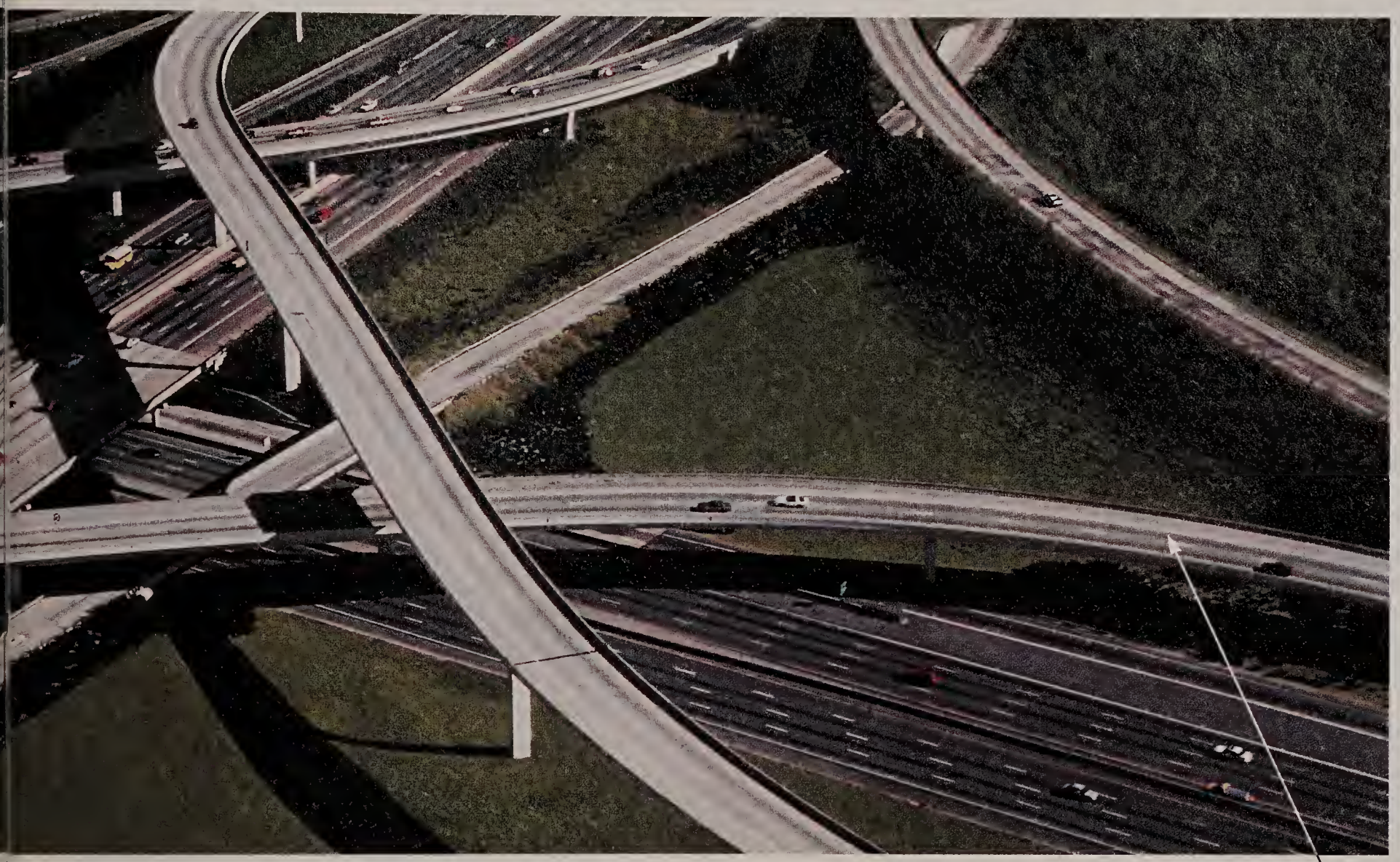

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Has It Changed Your Life Yet?

Users to get E-mail cookbook

By Tim Ouellette

Instead of just showing off new electronic-mail products, a major industry group is trying to show how these products work together.

The Electronic Messaging Association (EMA) will host the EMA Solutions Summit later this month in Santa Clara, Calif., to tackle interoperability issues among major off-the-shelf E-mail packages.

At the summit, "We'll show [users] how to make the different products work when you buy the box of software, and they will get an actual blueprint [on CD-ROM] of how to go about doing it," said Victor Parra, president of EMA (www.ema.org).

EMA wants to tackle E-mail interoperability at the most basic level first. It will show users how different packages can work together without the huge consulting and outsourcing costs of more complex systems.

"Though technically many of these products do work together out of the box," users still face some difficulty in that there is no clear explanation of how to make this happen once the software is purchased, Parra said.

And analysts estimate that most companies run at least two or three E-mail systems, on average. As a result, users may waste time and money by outsourcing relatively minor work to consultants or integrators.

For example, many products can trade E-mail messages via Microsoft Corp.'s Messaging Application Programming Interface transport. But messages can still lose attachments, headers and some graphic content if users don't tailor the installation properly for the two different products.

Participating vendors in the summit include the leading E-mail makers: Lotus Development Corp. (Notes and CC:Mail), Microsoft Corp. (Mail and Exchange), Novell, Inc. (GroupWise) and Hewlett-Packard Co. (OpenMail).

Additionally, Netscape Communications Corp., Intel Corp., MCI Communications Corp. and AT&T Corp. will participate to test E-mail interoperability with Internet products.

The Arlington, Va., group of user and vendor companies plans to use the event to launch EMA Test Labs, a testing service that will address various E-mail and communications interoperability issues.

The next scheduled test will focus on a more complex subject, the X.500 Internet directory interoperability standard (see story below), scheduled for EMA's conference next April in Philadelphia.

Suite success

Bundling deals strengthen Corel Office suite in retail channel

By Lisa Picarille

It has been just a little over six months since Corel Corp. acquired Novell, Inc.'s Applications Business Division. But already the Ottawa company is making some headway in the suites market.

Microsoft Corp.'s Office product remains the dominant suite, with 76.5% of the market, according to Dataquest, a research firm in San Jose, Calif. Corel has just 3.4%.

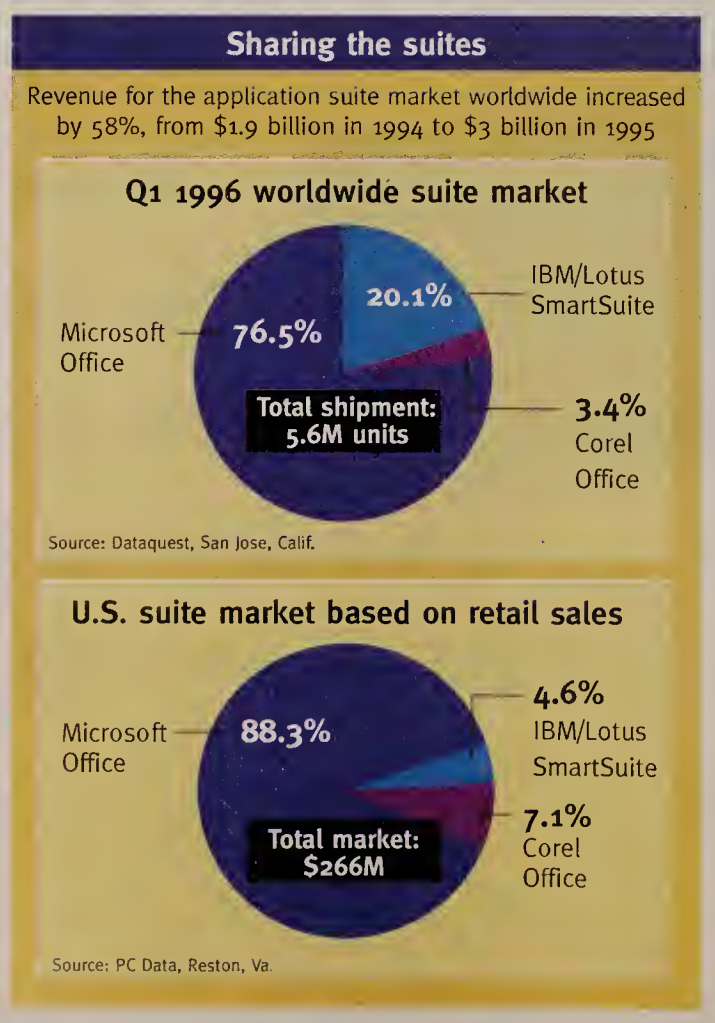
But Corel's aggressive campaign to forge bundling deals with hardware and software developers has sparked a surge in Corel Office sales at the retail level, which includes computer outlets, superstores and electronics stores. Corporate users typically establish an account with a software distributor rather than go to a mall to make a purchase.

In retail sales, Corel Office has 51% of the office suites market, ahead of Microsoft's 45%, according to recent figures from PC Data, a market research firm that specializes in the retail channel. Lotus Development Corp.'s SmartSuite has 4% of retail suites sales.

"Corel has been pretty aggressive at retail and accomplished what they set out to do," said Jeff Silverstein, editor of "Software Industry Bulletin," an industry newsletter in Stamford, Conn. "But it's unclear whether that will translate into an increase in overall market share." Silverstein attributed some of the spike in Corel's sales to the recent debut of a new version of WordPerfect Suite. "Plenty of WordPerfect customers held off upgrading to see who was going to buy the products," he said.

Trying to gain even more ground, Corel has announced a deal to bundle Netscape Communications Corp.'s Navigator browser with its Corel Office suite of productivity applications. The move is just one in a series aimed at combating rival Microsoft Office, which ships with Microsoft's Internet Explorer browser.

Also, Corel has announced a deal with Compaq Computer Corp. to bundle CorelDraw 5 with Compaq's Presario line of consumer PCs.



Bundle buddy

Microsoft, having noticed Corel's aggressive OEM moves, has started forging its own bundling agreements. It announced that it will bundle the Macintosh version of Office on some Apple Computer, Inc. Power Macintosh models in Europe. That is Microsoft's first Office bundling deal with Apple, although the Redmond, Wash., software giant has an agreement with Macintosh clone maker Power Computing Corp. to bundle Office for the Macintosh on high-end machines. To prevent further erosion of its dominant share, Microsoft will add WordArt, a drawing package, to Office 97, which is due by year's end.

Sources close to Microsoft said company officials were worried that Microsoft Office was losing sales to Corel Office because Corel's suite included its best-selling CorelDraw drawing package.

X.500 is the right ingredient

Although the X.500 standard for integrating different directories has been around for a while, users are still struggling to find decent products that implement it effectively.

The standard allows directory servers to share data on more than just E-mail addresses. Basically anything a company wants to track, including network resources, mail stops, phone numbers and job titles, can be a field in an X.500 directory.

X.500 deployment has been hindered because it is complex, primarily targets firms with large, widespread user populations and requires a lot of work to populate the directories with data.

Some observers said they think vendor support for the Lightweight Directory Access Protocol (LDAP) will improve the chances for X.500 support.

But LDAP goes only so far by providing client access to X.500 directories while full X.500 offers server-to-server compatibility.

The bottom line, according to Susan May, a consultant at KPMG Peat Marwick in Washington, is that despite these difficulties, vendors and users know this is the route for them. She has worked on X.500 projects for government and commercial sites during the past two years without a break because there is so much user demand. — *Tim Ouellette*

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NETWORK

How will you use it?"

Computer Industry

Cisco buy gooses Gigabit Ethernet

By Bob Wallace

The mad dash to develop Gigabit Ethernet products could mean users will have enough backbone network capacity to handle the deployment of switched and Fast Ethernet to workgroups possibly by year's end.

Cisco Systems, Inc. last week became the latest — and one of the largest — internetworking vendors to commit to the emerging technology. It did so by announcing plans to acquire Gigabit Ethernet pioneer Granite Networks, Inc. for $220 million.

Gigabit Ethernet enables the original 10M bit/sec. Ethernet technology to run at 1G bit/sec. by tweaking its components to accommodate far higher speeds. Cabletron Systems, Inc. and a slew of start-ups have pledged Gigabit Ethernet products, some by the end of the year.

The lineup

Gigabit Ethernet vendors on tap at Networld/Interop '96

- Cabletron
- UB Networks
- NBase Communications
- Extreme Networks
- Alteon Networks
- Packet Engines

Good for the backbone

From an engineering standpoint, Gigabit Ethernet would make sense in backbone networks. That's because users run switched 10M bit/sec. to desktops and 100M bit/sec. Fast Ethernet to servers and between switches. So they need something faster than Fast Ethernet for their backbone networks, where traffic flows are the heaviest.

Gigabit Ethernet will allow businesses to deliver bandwidth-demanding graphics-based applications, imaging and videoconferencing to employees. All are especially attractive to manufacturing, health care and insurance firms.

That means no painful upgrades, no retraining of information systems staff and no preproduction technology pilots, all of which drain IS resources and budgets. But users who need the ability to support multiple types of traffic will need Asynchronous Transfer Mode.

Users can expect to see the first fruits of Gigabit Ethernet development efforts at Networld/Interop '96 in Atlanta next week. Cabletron and many lesser-known firms will showcase prototype wares there (see chart).

Analysts said that, at first glance, it appears Cisco overpaid for Granite, which has yet to ship a product. Yet they agreed the acquisition is a sound investment.

"What they're paying for is the ASICs, which are extremely difficult, time-consuming and cost a ton of money to develop," explained Eric Hindin, an analyst at The Yankee Group in Boston. ASICs, or application specific integrated circuits, are the brains of switches. "Cisco will be able to easily and quickly take the Granite ASICs and implement them in their switches and other products. So what they bought was time-to-market."

Hindin said if ASICs were easy to develop, Fast Ethernet products would have hit the market much sooner than they did and would probably cost far less.

Analysts calm as DEC trips again

By Jaikumar Vijayan

Digital Equipment Corp.'s latest warning of a weaker-than-expected quarter raises questions about the company's turnaround. But analysts remain cautiously optimistic.

In an ominous replay of the previous quarter, company officials said last week that slow orders caused by a recent sales force revamp and a continued weakness in European sales were likely to result in lower profits this quarter.

Digital had strung together six profitable quarters, but it posted a $433 million loss in the fiscal fourth quarter ended June 30. Contributing to the loss was a $492 million restructuring charge.

The latest warnings from Digital could be indicative of continuing internal problems, analysts said. But it could just as well be part of a larger, industrywide slowdown.

"We are going to find out that there are numerous companies that are going to be announcing mildly weaker-than-expected earnings this quarter," said Michael Geran, an analyst at a division of Donaldson Lufkin & Jenrette Securities Corp. in Jersey City, N.J.

Contributing to the slowdown are overall pricing pressures and a general weakening of the European market, Geran said. In Digital's case, recent product transitions and internal reorganizations may have contributed, he added.

Wall Street's muted reaction to Digital's announcement — Digital stock was largely unaffected — is likely to keep the heat off CEO Robert Palmer, the person analysts believe will inevitably take the rap if the company fails to become profitable again soon.

In four and a half years at the helm, Palmer has been widely credited with turning around Digital's sagging business.

But most of that was achieved through cost-cutting measures that include massive layoffs, the shuttering of numerous facilities and an exit from nonprofitable businesses. Recent initiatives have included attempts to mend relationships with channel distributors and a heavy emphasis on high-margin Windows NT platforms.

Analysts said although Palmer may have succeeded in putting a lid on costs, he has failed to grow product revenue significantly over the past few years. Without that happening, Digital's ability to sustain its turnaround attempts will be seriously hampered, analysts said.

"There is nothing wrong with Digital's business strategy. It has been the execution that hasn't been up to snuff," said David Wu, an analyst at The Chicago Corp. in New York.

Hit the DEC

Analysts agree Digital has a good strategy...

- Keep a lid on expenses; drop unprofitable businesses
- Focus on high-margin Windows NT platforms, Alpha servers
- Provide greater role for channel partners in sales/order fulfillment

But it also has to...

- Figure out what to do with its PC business
- Reduce channel conflict, improve margins
- Grow product revenue

Acquisition brings 'net-based trading nearer

By Thomas Hoffman

Wit Capital Corp., an online stock trading service being launched by microbrewer and "infopreneur" Andrew Klein, has acquired an electronic-commerce software package that will enable it to match stock orders between buyers and sellers when the Internet-based service goes live early next year.

The New York-based firm last week purchased Global Trade, Inc.'s Electronic Price Improvement Center software for "several million dollars" worth of Wit Capital stock, said Chris Keith, president of Global Trade in New York. He also will serve as Wit Capital's chief information officer.

Under the terms of the deal, Wit Capital also acquired the services of Global Trade's 10-person development team.

Internet stock sales

Brewer online

Wit Capital was founded earlier this year by Klein, chairman of Spring Street Brewery Co. in New York. The microbrewery's stock last year became the first Internet-based initial public offering.

Wit Capital is expected to be the first Internet-based service to allow individual buyers and sellers of New York Stock Exchange and Nasdaq Stock Exchange issues to match their orders electronically. Electronic order-matching services currently are available only to large institutional investors through private trading services such as Reuter's Instinet and Posit.

Under Wit Capital's model, once buyers and sellers have matched their orders online, Wit Capital (www.witcap.com) will send the orders electronically to an established exchange, where the orders will be executed, Keith said.

Although Wit Capital's service would be unique, industry experts are skeptical about an unproven electronic commerce system launched by a microbrewery with scant stock-matching experience.

"One of the things an Instinet does is check the financial capacity of the players who are buying and selling stocks," said Larry Tabb, an analyst at The Tower Group, a financial services and technology consultancy in Wellesley, Mass.

Those verifications "might be difficult to achieve over an Internet-based [matching] system," Tabb added.

Choosing the best hardware to run Windows NT® 4.0 has forced IS managers to confront their biggest fears:

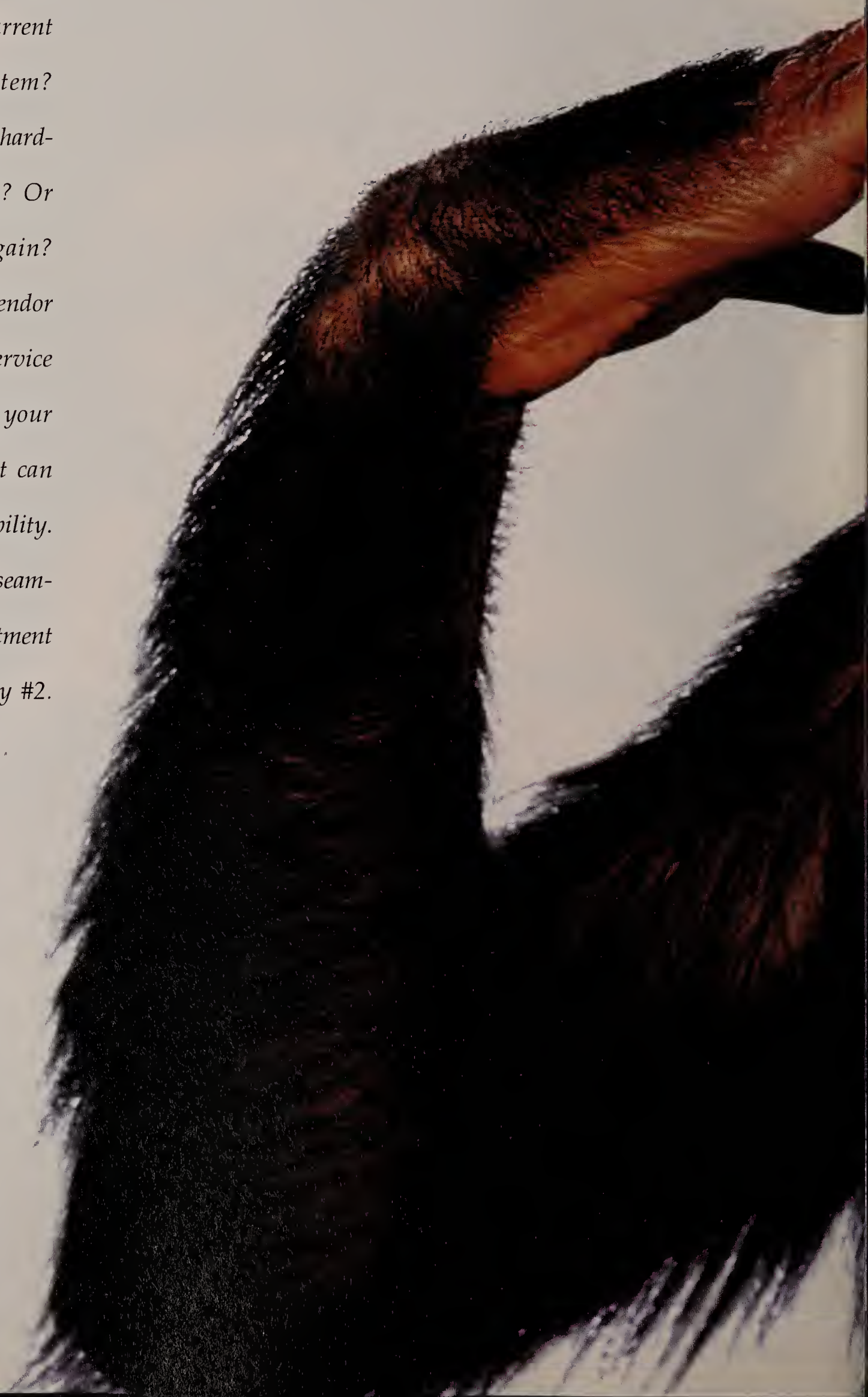
Failure.

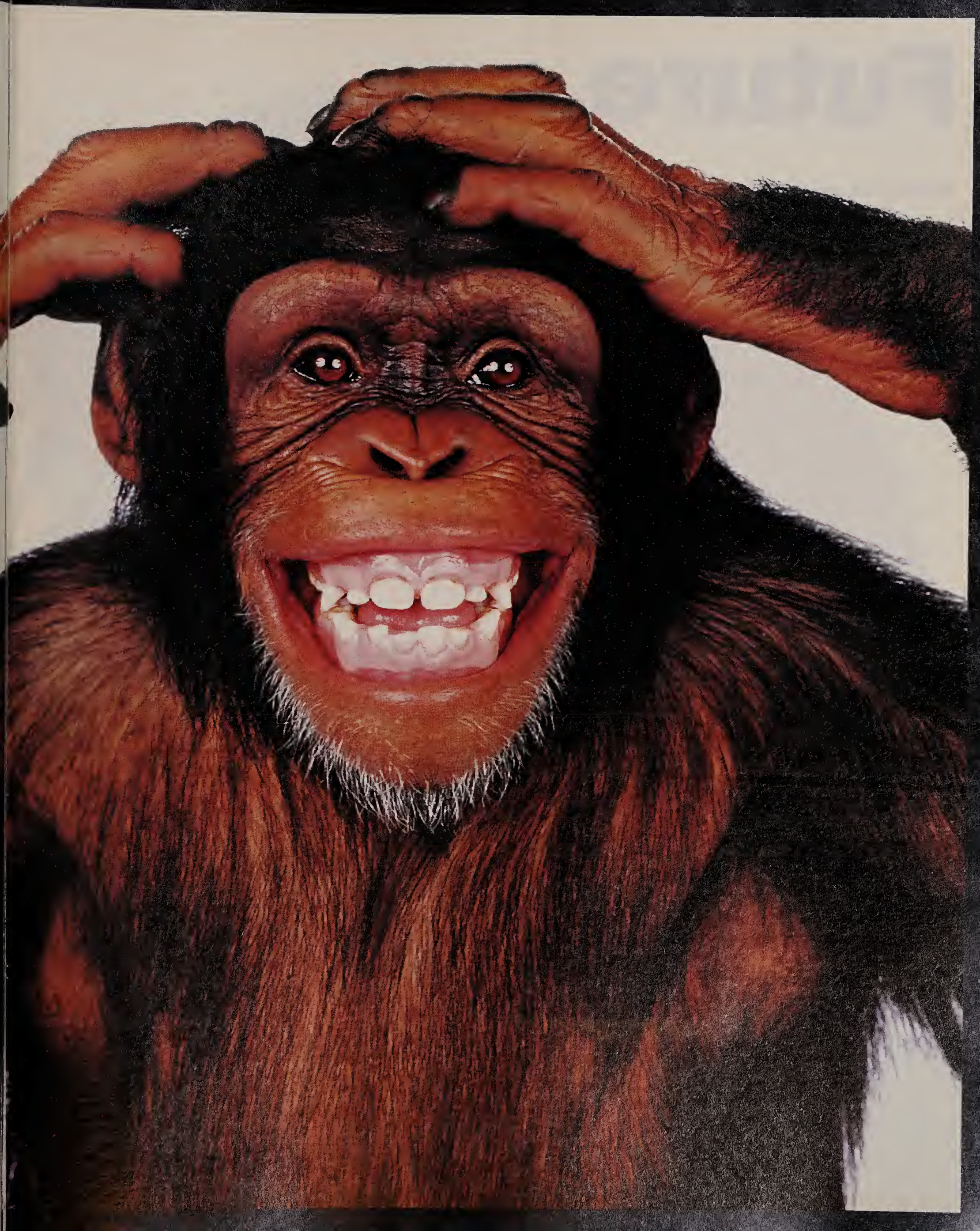
Monkey on your back #1. *Let's face it, migrating to another operating system does involve risk. And now that Windows NT® 4.0 lets your users access mission-critical information right from their desktops and laptops, how do you ensure data availability? By far the most reliable way is through clustering – a technology one company was the first to develop for Windows NT to ensure automatic failover and maximum availability. For you, clustering for Windows NT means uninterrupted access, reduced risk, greater peace of mind—oh, and one less monkey on your back. Read on…*

Finances.

Monkey on your back #2. *Budgets.*

What about the budgets? How will your current apps work with your new operating system? Will the upgrade work across your existing hardware, operating systems and applications? Or should you bang on your CFO's door again? One company with over 35 years of multivendor integration experience, including global service and support, can do more than just port your apps to Windows NT® It's a company that can give you complete Windows NT interoperability. Which means your information will flow seamlessly across platforms, and your legacy investment will be well protected. So much for monkey #2. Now on to #3…





Future.

Monkey on your back #3. *Migrating to Windows NT® 4.0 is one thing. But committing to Windows NT long-term, relying on it to play a critical role in your enterprise, that's another. Fortunately, one company—the one we've been talking about—can help. Digital. With our heritage in VAX, multivendor integration, enterprise-level computing, Ethernet and the foundations of networking, Digital is uniquely suited to greatly improve your future. Our newest servers, workstations, desktops and notebooks are every bit as enterprise-ready as Windows NT. In fact, today no other vendor can equal Digital's full line of Windows NT-optimized products across Intel and Alpha platforms, or the service and support that can help keep the monkeys off your back. Simply put, no one is better prepared to show you that migrating to Windows NT doesn't have to drive you bananas. Call 1-800-DIGITAL and press 3 for your nearest reseller, or visit our Web site at www.windows.digital.com.*

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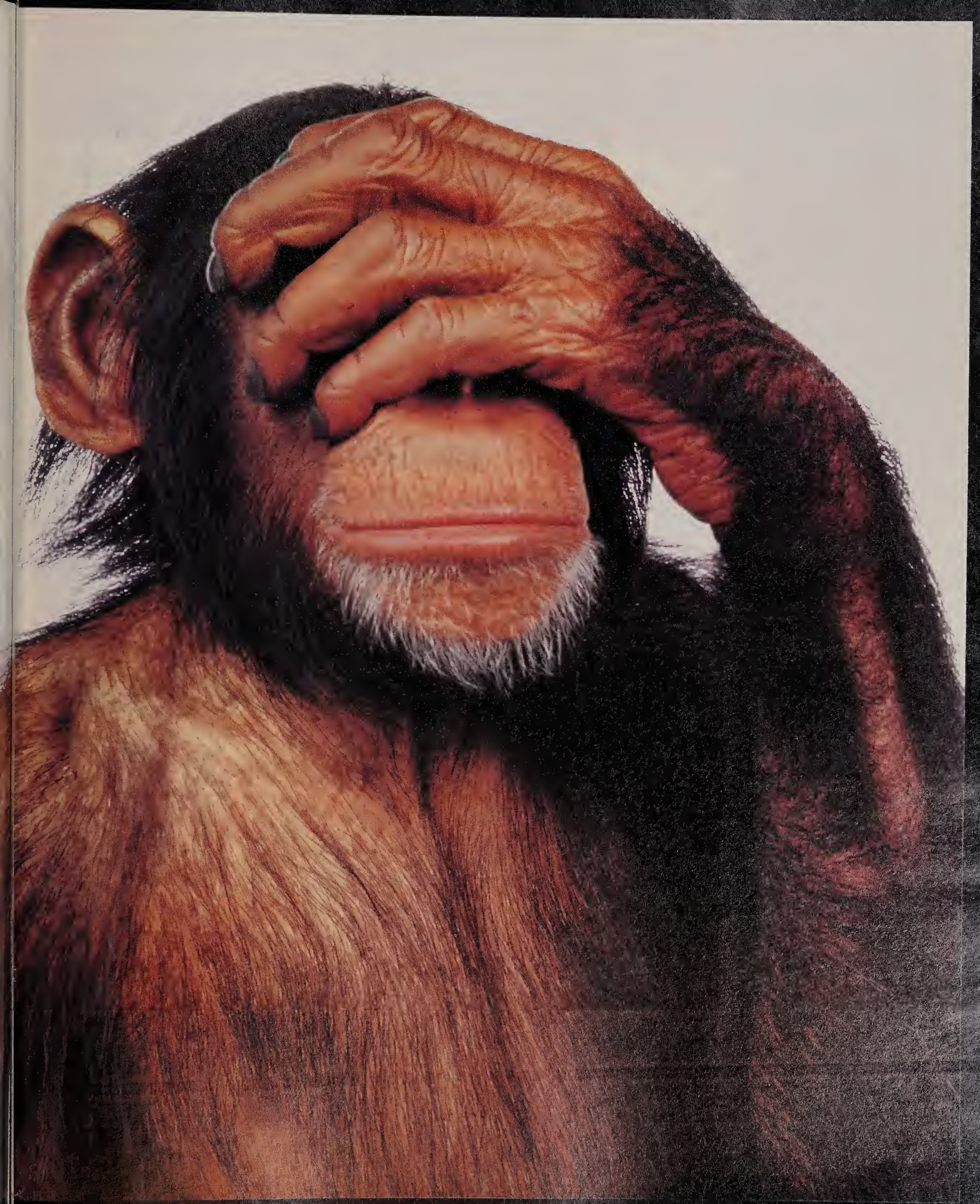


Editorial

Press C for consult

"Welcome to the Acme Computer Consulting automated support line, providing technical support for users of our consulting services.

"If you are having difficulty starting your consultant, or if you cannot find your consultant, press one. If you already are a customer and are dissatisfied with your consulting service, press two.

<Beep>

"We're sorry our consulting services have not met your expectations. Please respond to the following choices. If your consultant appears to be incompetent, press one. If your consultant is competent but lacks initiative, press two. If your consultant is not showing up for work, press three. If your consultant is sick or dead, press four.

<Beep>

"We're sorry your consultant is incompetent. To receive by fax a list of common solutions for incompetent consultants, press 99. Otherwise, please respond to the following choices.

"If your consultant doesn't understand your business problem, press one. If your consultant understands the problem but doesn't know what to do about it, press two. If your consultant has an answer to your problem, but it's the wrong answer, press three. If your consultant insists on solving the problem with an object-oriented language or CASE tool, press four. If your consultant is totally clueless, press five.

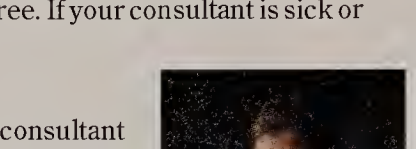
<Beep>

"We're sorry your consultant is clueless. Please tell us what you would like to do. If you want us to fire your consultant, press one. If you want to keep the consultant but want a refund of all or part of your contract fees, press two. If you want to return your consultant to us for refurbishment, press three. If you feel that you may do physical harm to your consultant, please stay on the line.

<Beep>

"You have asked for a consultant refurbishment. Our pickup hours are 8 a.m. to noon, Mondays through Wednesdays. Please leave your consultant in your front lobby or outside the rear of the building, but away from the trash bin. Refurbished consultants are covered by warranty for 90 days.

"We apologize for your consultant's performance and pledge to rectify this situation. Thank you for using Acme, the friendly computer consultancy."



Paul Gillin, *editor*
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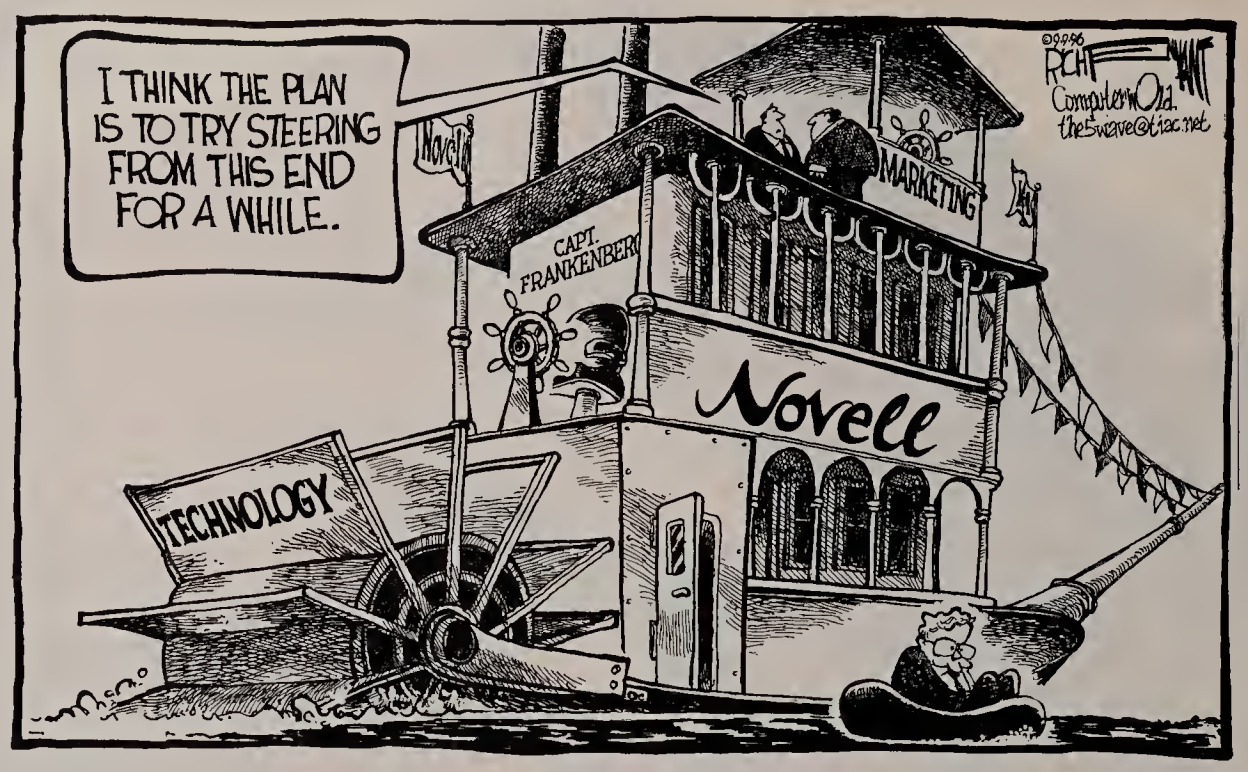

Letters to the editor

Cut the hype about software prowess

I read with interest Paul Gillin's Aug. 5 editorial about the Share user group meeting and dealing with industry hyperbole.

He wrecked a perfectly good article with the last paragraph: "Client/server, the Internet and other technologies may eventually shift a few paradigms . . ."

Consider the following: How much different would the computer industry be right now if all software components were given equal press?

For example, would OS/2 be as popular as NT? Would mainframes be as archaic as they are made out to be because of the hype of current magazine articles? Would X-terminals be better for many applications than a PC?

As with all software, they are just tools to do a job. The software industry continually looks for a silver bullet and should realize now that no such bullet exists.

The people at Share are correct when they eschew technological marvels in lieu of functionality.

I just wish magazines would learn the same lesson and provide unbiased and informative information about technologies that are not viewed as state-of-the-art. After all, with all the advances in battery-powered screwdrivers, the old hand-twist ones do the job just fine. Why should software be viewed as anything different?

Joe Trubisz
Department of Computer Science
State University of New York
at Stony Brook

Location, location, location

I noticed that on page 29 of your July 29 issue, the map accompanying the "Chasing deadbeats online" article shows Los Angeles County, Calif., on the outskirts of the San Francisco Bay area.

First, Chicago was moved to northern Ohio in your June 24 issue, and now L.A. has been misplaced by almost 350 miles. Hmmm . . . perhaps proofreading of the maps is in order. Regards to an otherwise fine periodical.

Jeff Ferguson
Minneapolis

Editor's note: We've heard from several of our alert readers on this very topic, with a few of them even applauding the new location for L.A. We promise to keep a closer eye on geography in the future.

Concerned with info, not orientation

The information I am looking for in my profession, and the reason I read *Computerworld* (and other industry magazines), is not enhanced or affected by the sexual orientation of the people who are interviewed, quoted or reported upon.

Specifically, in response to Scott Abel's letter in the Aug. 12 issue: 1) This is not a nasty letter, and 2) you and your computer-related skills or experiences may make extremely relevant subjects. But your sexual behavior is, in most cases, not relevant to how I apply the solutions or information presented, any more than my sexual behavior is.

Jim Rogers
Saline, Mich.

Chew on this one

"Inside Lines" is where I turn first when I receive my *Computerworld* issues. There is always some information that is useful, funny or both (and sometimes in the same blurb!).

In the "It's not polite to point . . ." blurb [CW, Aug. 12], you wonder what information systems managers do to address problems in multivendor environments. I get everyone into the office and fill them up with coffee, bagels and cream cheese. The tech rep who consumes the most is the one with the story to tell. I can't say that this is a foolproof methodology, but it creates a relaxed environment, shows that we care about people who work on our machines at 6 a.m. (or earlier) and is fun for all involved.

We don't point fingers, and those who do should consider that tech reps carry pointed and sharp objects!

Gregory A. Tutunjian
Brookline, Mass.

■ Computerworld welcomes comments from its readers. Letters should not exceed 200 words and should be addressed to Paul Gillin, Editor, Computerworld, PO Box 9171, 500 Old Connecticut Path, Framingham, Mass. 01701. Fax number: (508) 875-8931; Internet: letters@cw.com. Please include an address and phone number for verification.

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- (b) Netware
- (c) OS/2
- (d) Unix
- (e) Mac OS
- (f) Windows NT
- (g) Windows
- (h) NeXTstep

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C. 5,000 – 9,999	☐	☐
D. 1,000 – 4,999	☐	☐
E. 500 – 999	☐	☐
F. 100 – 499	☐	☐
G. 50 – 99	☐	☐
H. 20 – 49	☐	☐
J. 10 – 19	☐	☐
K. 1– 9	☐	☐

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22. Dir./Mgr. Network Sys., Data/Tele. Comm., LAN Mgr. /PC Mgr., Tech Planning, Administrative Services
23. Dir./Mgr. Sys. Development, Systems Architecture
31. Programming Management, Software Developers
41. Engineering, Scientific, R&D, Tech. Management
60. Sys. Integrators/VARs/Consulting Mgt.
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(b) Netware (f) Windows NT
(c) OS/2 (g) Windows
(d) Unix (h) NeXTstep
App. Development Products ☐ Yes ☐ No
Networking Products ☐ Yes ☐ No

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B. 10,000 –19,999	☐	☐
C. 5,000 – 9,999	☐	☐
D. 1,000 – 4,999	☐	☐
E. 500 – 999	☐	☐
F. 100 – 499	☐	☐
G. 50 – 99	☐	☐
H. 20 – 49	☐	☐
J. 10 – 19	☐	☐
K. 1– 9	☐	☐

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FROM A REPORT BY GREGORY WESTER, AN ANALYST AT THE YANKEE GROUP IN BOSTON:

The evolution of the online newspaper industry will parallel the evolution of a species: Players must fully establish themselves in the next five years or risk extinction. Central to successful evolution will be early and complete buy-in from corporate management. With average start-up costs of $500,000, plus the additional labor expenses for seven to 12 employees, there's going to be a lot of money lost for the next four years. Management must be fully devoted to these efforts throughout the evolution.

While many business models have been attempted, advertising will be the only viable approach — accounting for over 85% of yearly revenues. Subscriptions will account for only 10%, with pay-per-view and other sources accounting for the remainder. [But] even advertising revenues will be slow to mature.

FROM A STATEMENT BY ZONA RESEARCH, INC. IN REDWOOD CITY, CALIF.:

"Info-keiretsu" are global groupings of companies focused on information content, delivery and use. [They] form intense business partnerships based on vested interests.

Zona has identified two highly developed info-keiretsu. The first includes Microsoft Corp., NBC, British Telecom, MCI Communications Corp., News Corp., Dreamworks SKG, Digital Equipment Corp. and CompuServe, Inc. The second info-keiretsu is focused around AT&T, IBM, Walt Disney Co., Time-Warner, Inc., Knight-Ridder, Inc. and Netscape Communications Corp.

In the long term, these info-keiretsu will have a major impact on what information is made available and how that information is presented. What we're seeing are the seeds of a massive coordination and collusion between information creators, deliverers and consumption technology suppliers.

Tyrannosaurus Gates, market predator

David Moschella

Microsoft wants to crush the only thing standing between it and software industry dominance.

During the past 15 years, Microsoft has had it almost too easy as its key rivals have invented new ways to fall on their swords. First, IBM handed over PC operating systems, then Apple did the same with the user interface. At the server level, Novell mysteriously lost its networking focus, while the Unix community repeatedly failed to establish a unified standard, thus opening the enterprise to the one-time industry laughingstock, Windows NT.

Those huge competitive blunders have made it difficult to join the anti-Microsoft antitrust crowd.

But it's now clear that tiny Netscape Communications is all that stands between Microsoft and almost total software industry dominance. Microsoft appears willing to do whatever's necessary to destroy its last real challenger. Consider the following anti-Netscape tactics:

1. Give away products that compete with your rival's core products. Microsoft's giveaway of a full range of new products should have triggered protests about predatory pricing. But Netscape's large market lead and the prevailing freeware culture of the Internet have silenced most of the industry. Bill Gates said it all when he told *BusinessWeek,* "We don't need to make any revenue from Internet software." Obviously, Netscape does.

2. Deploy the lawyers. Microsoft on July 30 formally asked Netscape to "cease and desist" promoting its Web server software for use on Microsoft's NT Workstation. Netscape has firmly refused. But some users will think twice before they risk violating Microsoft's NT Workstation license agreement.

3. Apply financial muscle. Microsoft on Aug. 13 announced agreements with seven of the leading World Wide Web sites. In each case, what were formerly per-fee services will be provided free to customers who use Microsoft's Internet Explorer browser. Similar anti-Netscape financial deals have been made with AT&T, America Online and, according to Netscape, many PC manufacturers. In effect, Microsoft now pays customers to use its software.

Netscape has shown no signs of self-destructing, but with Microsoft determined to give away its products and even pay people to use them, the pressure can only increase. Not surprisingly, Netscape has taken legal action, accusing Microsoft of making improper payments in violation of its 1994 federal antitrust settlement. But even a favorable decision might come too late to help.

More tangible help would come from a cash-rich partner with the money to match Microsoft — freeware for freeware, payment for payment. Perhaps IBM, Oracle or Sun Microsystems could get involved. Those three are among 10 companies that just sank $100 million into a Java venture capital fund; it's a step in the right direction.

Why should users care? Five years from now there could be an installed base of 300 million or more browsers. In a competitive market that reflects product costs, browser software would be priced very low, perhaps just a few dollars. If a monopoly leader succeeds in charging $30, that's nearly $10 billion in unnecessary spending, all going into one vendor's pocket. And that doesn't count the server software.

Until now, the Microsoft vs. Netscape battle has been a healthy rivalry. But Microsoft's recent actions have exposed a nature never before displayed so starkly. It's time for the government, the industry or, ideally, both to take action. Microsoft is no longer just a smart competitor; it's a predator at large.

Moschella is senior vice president of research at Computerworld, Inc. in Framingham, Mass. His Internet address is david_moschella@cw.com.

Business alignment: A two-way street

Michael Schrage

Yes, IS should become more business-savvy. But business clients should become more IS-savvy, too.

Between client/server computing, the intranet and rampant decentralization and downsizing, practically every infoguru of note preaches the mantra of aligning IT with business objectives. The IS department needs to become more business-oriented. Who can argue with that?

So IS folks are doing everything from undergoing sensitivity training to becoming executive MBAs to better align themselves with the business units they purport to serve. Admirable? Yes. Futile? You betcha.

There's no question that most people in IS need to become more business-savvy. But there's also no doubt that the overwhelming majority of businesspeople need to become more savvy about being an IS client.

That doesn't mean general managers need to be debriefed on Java vs. ActiveX or the distinctions between intranets and client/server architectures. Technical literacy — or even technical awareness — isn't the point. The reality — which absolutely stuns me — is that not one of a dozen Fortune 1,000 firms I've talked with trains its general managers about how to be a good IS client. Not one!

I'm not talking "expectations management" here. Any project manager with more than an ounce of neurons in their cerebral cortex knows that managing expectations is essential to any successful development and deployment. What I'm talking about is an orientation that gives the internal client some useful tools and rules about making development life better and easier for IS.

Does anyone think it's an accident that Andersen Consulting and Cambridge Technology Partners (CTP) intensely negotiate and orient their clients before taking on an assignment? Indeed, CTP puts its clients through a one-week Rapid Solutions Workshop.

Are technical and business issues discussed and resolved? Sure. But CTP is also training the client on how to be a good CTP client.

How many internal IS organizations can make the same claim? Is it possible that one reason outsourcing has become popular is that clients were unable — or unwilling — to work well with their internal IS shops but were willing to learn from outside firms how best to work cost-effectively on development projects? Everyone talks about the importance of "peopleware" issues, but it's ridiculous to believe that the bulk of the problems inherently come from IS.

Internal IS shops need to steal a page — make that a chapter — from the more successful outsourcers. Look at the internal projects that worked, and develop a set of best practices that can be turned into a one- or two-day workshop to help clients learn how to be better clients. Departments and division teams that assent to such training should get preference from IS. Those that graciously — or rudely — decline should politely be informed that they're hurting their chances for success. Better yet, make them pay extra for the time, money, headaches and heartaches they'll put you through.

Make no mistake: IS has a lot to learn about aligning technology capabilities with business aspirations. But perhaps one of the best ways to attain that alignment is to help train clients on how they can create the best partnerships to create the best software.

Schrage is a research associate at the MIT Media Lab and author of *No More Teams!* His Internet address is schrage@media.mit.edu.

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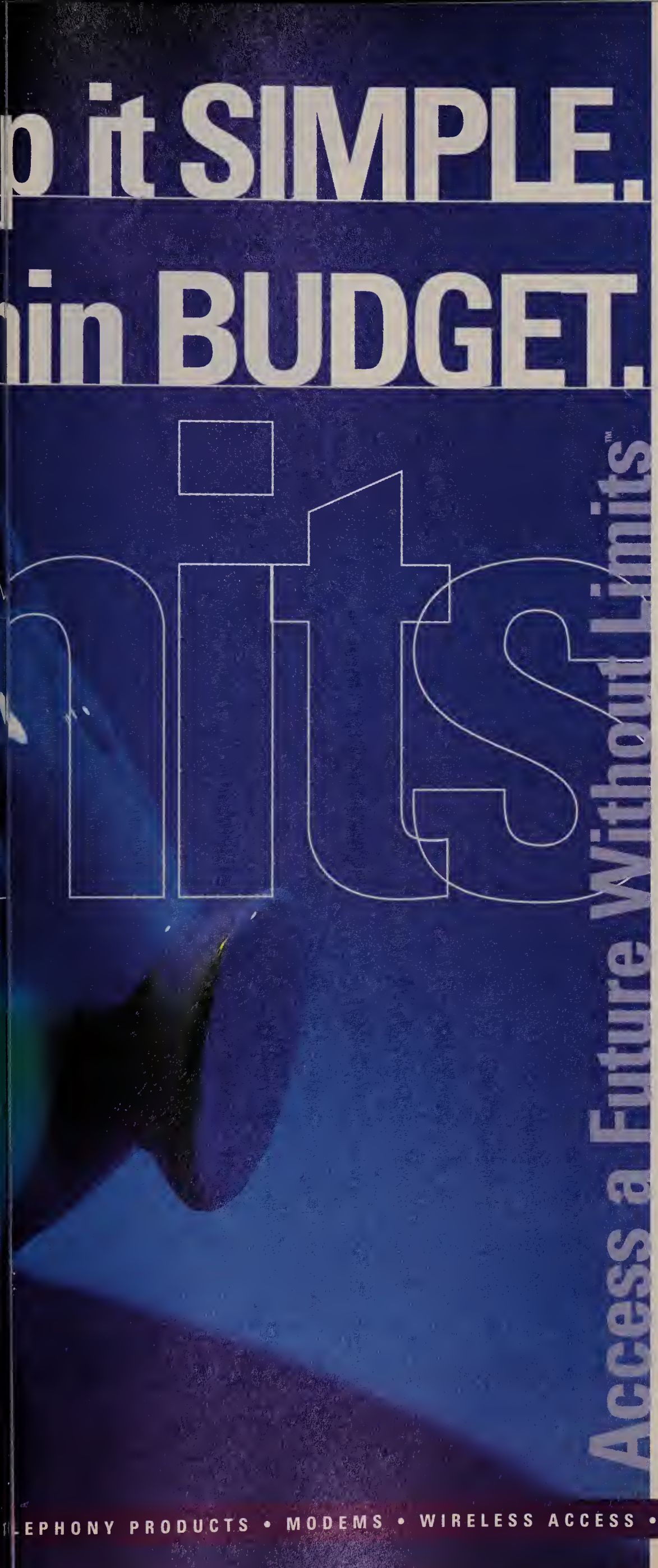

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Amdahl's storage technology crosses platforms, **46**

Servers & PCs

AS/400 users pushed to 'RISC-y' move

By Michael Goldberg

As IBM introduces new capabilities for RISC models of the AS/400, it has begun to slowly fade out features for older models of the machine.

The company last week unwrapped software designed to put RISC models based on 64-bit PowerPC processors on par with older AS/400s that use 48-bit complex instruction set computing (CISC) hardware. Before now, only CISC models supported Lotus Development Corp.'s Notes, for example [CW, Sept. 2].

Having reached this software parity — and promising future advances — IBM officials are encouraging long-time AS/400 users to migrate to RISC machines, which offer more performance for the money. IBM started selling AS/400 RISC models in December.

RISC machines

For users of the older CISC models, the message is clear, users and analysts said: If you will need more computing capabilities in the future, move to RISC. If you run a stable operation that isn't expected to change or grow very much, IBM will support you on CISC — up to a certain point.

IBM, *page 46*

Closing the gap

DG joins in race to provide Windows NT clustering capabilities

By Jaikumar Vijayan

Users won't have to wait for Microsoft Corp.'s mid-1997 delivery schedule to get Windows NT clustering capabilities. Several vendors are already stepping into the breach.

Data General Corp., for instance, recently added its name to the rapidly growing list of vendors that offer fail-over clustering for Windows NT. Other companies include Digital Equipment Corp., NCR Corp. Tandem Computer Corp. and Compaq Computer Corp.

These vendors provide what Microsoft can't: software that lets users "cluster," or tie two Windows NT servers together, with one backing up the other. If the primary server fails, the backup server automatically takes over, which allows users to protect and recover data.

DG's Aviion NT clusters, for instance, let users tie two quad-processor Windows NT servers in a so-called high-availability cluster.

The Aviion NT Cluster combines Firstwatch for NT fail-over from Veritas Software Corp. with DG's Intel Corp.-based Aviion server line. It also includes DG's fault-tolerant Clariion RAID technology storage systems. Prices start at about $50,000.

The reliability and uptime provided by clusters such as these have been available for years in the Unix space and are considered vital by users thinking of using NT for critical application environments, analysts said.

Denman Tire Corp. in Leavittsburg, Ohio, for instance, migrated most of its crucial applications from a proprietary system to a Unix environment about two years ago.

"At that time, Unix was the only environment that offered the scalability and fail-over we were looking for," said Tim Boyer, data processing manager at Denman. But if features such as high-availability had been available in Windows NT two years ago, "we may have decided to go with it instead," he said.

Microsoft is leading a group of hardware vendors, including Digital, NCR and Compaq, in a joint development effort called WolfPack. This effort involves integrating clustering capabilities on Windows NT. But volume shipments of cluster-capable software for NT aren't expected to start until the middle of next year.

"But you've got to have something right now, which is why all these vendors are doing their own announcements," said James Greene, an analyst at Summit Strategies, Inc. in Boston. Greene said vendors with early Windows NT cluster products will most likely integrate their products with WolfPack when it becomes available.

"To that extent, most of these announcements are like placeholders. It allows vendors to gain some credibility and differentiation" by the time products from WolfPack become available, he explained.

DG's Aviion NT Clusters

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CACHE: 256M bytes
DISK DRIVE: None
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PowerEdge, Model 2100

PROCESSOR: 180-MHz Pentium Pro
RAM: 32M bytes
CACHE: 256M bytes
DISK DRIVE: 2G bytes
PRICE: $3,799

Low prices, greater power launch Pentium Pro servers into mainstream

By Bob Francis

The second generation of Pentium Pro-powered PC servers is coming to market at prices likely to lure information systems managers away from standard Pentium systems.

New systems from Dell Computer Corp. in Austin, Texas, Hewlett-Packard Co. in Palo Alto, Calif., and Advanced Logic Research, Inc. in Irvine, Calif., all were designed for lower-end PC server applications.

For users, the new Pentium Pro systems could mean more than just additional power at a lower price. "Basically, once we get the Pentium Pro systems on our approved buy list, it means eventually we'll be dealing with a more common platform for all our PC servers," said Erik Goldoff, IS manager at the Centers for Disease Control and Prevention in Atlanta.

With the new lower-end Pentium Pro systems, IS shops could use Microsoft Corp.'s Windows NT operating system for functions such as print and file servers. Intel Corp.'s Pentium Pro microprocessor was designed for 32-bit operating systems, such as Windows NT, while the standard Pentium processor still uses 16-bit code. That means NT applications will run faster on Pentium Pro processors than on the standard Pentium, said Dean McCarron, an analyst at Mercury Research in Scottsdale, Ariz.

Prices for entry-level Pentium Pro servers are also dropping. Most Pentium Pro systems started at approximately $5,000 to

Pentium Pro, *page 48*

Migration service with a twist

Amdahl's storage technology crosses platforms, lets users move data while still running apps

By Michael Goldberg

Amdahl Corp. last week introduced a storage technology that lets mainframe users move data to newer disk arrays while continuing to run their business applications.

Amdahl, based in Sunnyvale, Calif., initially plans to release its Transparent Data Migration Service (TDMS) to users migrating data to its Spectris storage subsystems. Spectris systems, which use RAID technology to provide error- recovery and backup capabilities, started shipping in April.

Mainframe storage

Strong point

The strength of Amdahl's implementation is that "you don't have to take an application off-line" to move data, said John McArthur, an analyst at International Data Corp. in Framingham, Mass.

The move within a data center is done as a batch job by the mainframe and may take five seconds to switch data addresses from old storage to new, Amdahl officials said. End users doing data entry might see a slower-than-usual response time from the system for a moment, but the computer system continues to operate.

McArthur said TDMS could give users more flexibility in their data migration efforts because the technology isn't tied to Amdahl storage subsystems. Users potentially could use TDMS software from Amdahl to move data from older storage devices to newer subsystems that are compatible with the IBM System/390, he said.

However, the storage market leaders, IBM and EMC Corp., currently can't offer this capability.

IBM is working to provide this type of technology, according to McArthur. IBM offers two copying technologies that can be used for data migration — Extended Remote Copy and Peer-to-Peer Remote Copy. Like Amdahl's offering, Peer-to-Peer Remote Copy allows businesses to keep their applications running, but it also requires users to move data to an IBM disk array.

EMC provides Symmetrix Data Migration Services for the same function and also requires migrated data to move to an EMC Symmetrix. The other market player, Hitachi Data Systems Corp., also has said it will provide data migration technology (see chart).

General availability unknown

Paul Ellis, a compatible storage marketing manager at Amdahl, said the company will offer TDMS to Spectris users through the rest of the year. He added that if "a large, strategic customer" wanted to use the technology to migrate data to another vendor's storage system, Amdahl would help out. However, the company isn't saying when the technology will be made generally available.

The cost of the TDMS technology includes software and consulting services for the data migration. Prices vary, depending on the size of the job, but a user moving 1T byte of data would have a list price of $139,000.

TDMS requires mainframe users to have Version 4.2 or higher of the MVS operating system.

Taking flight

Data migration technologies for mainframe disk storage

Vendor	Migration technology	Strength
Amdahl	Transparent Data Migration Service	Keeps applications online
EMC	Symmetrix Data Migration Services	No mainframe CPU
HDS	Hitachi Online Data Migration*	Keeps applications online
IBM**	Peer-to-Peer Remote Copy	Keeps applications online
	Extended Remote Copy	Can copy data to site 43 kilometers away

*Available fourth quarter

**IBM resells Storage Technology disk arrays. StorageTek doesn't offer a data migration technology for disk.

AS/400 users pushed to 'RISCy' move

CONTINUED FROM PAGE 45

Glen Van Benschoten, director of systems product management for the AS/400, said IBM will provide new operating system bug fixes for CISC users for the next several years. For example, the latest CISC edition of the OS/400 operating system, Version 3, Release 2, will get bug fixes through 1998 at least, he said. Version 3, Release 2, is probably the last major CISC operating system release, he said.

CISC users won't get some new technologies. Only RISC AS/400 models will be able to run Notes natively, according to Van Benschoten.

Now, both CISC and RISC machines support Notes through a second processor board running OS/2 and located inside the AS/400. Native OS/400 support for Notes would improve performance and requires RISC hardware, IBM officials said.

Other users who may want to stick with older AS/400s will find IBM's response directly proportional to their numbers, said Tom Bittman, an analyst at Gartner Group, Inc. in Stamford, Conn.

"IBM would love to force people to move [to RISC], but they're hedging their bets" by offering some software enhancements to satisfy CISC users, Bittman said. If enough users clamor for more, IBM will be forced to offer more, he added.

Keeping watch

Users said they have closely monitored these developments in choosing whether to migrate to RISC. And last week's announcement of the second OS/400 release for RISC machines, called Version 3, Release 7, provides a greater comfort level.

"We're prepared to move to [RISC] technology now that it's been out for a bit," said David Vella, computer systems administrator at The Canadian Surety Co., an insurer in Toronto. Vella said his company could get similar hardware performance with a RISC model for about $100,000 less.

Free software

IBM is offering a free beta version of its AS/400 client access software for Windows NT workstations via its World Wide Web site (www.ibm.com).

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New Products

Cybernetics, Inc. has introduced a half-height, 3.5-in. 8mm tape drive, the CY-8000.

According to the Yorktown, Va., company, the CY-8000 can store 25G bytes uncompressed on one tape and up to 125G bytes compressed. It provides Fast/Wide SCSI interfacing and a 4M-byte data buffer.

It works with most computer systems and is available in a single- or multidrive desktop, rack mount or tape library configuration. It features an Advanced SCSI Processor that allows two or more drives to work together in striping, mirroring, cascade, off-line copy/verify or independent modes.

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▶ *Cybernetics*
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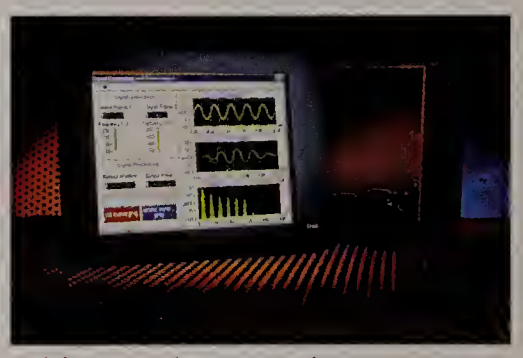
Dolche Computer Systems has introduced PanelMount, a flat-panel monitor.

According to the Fremont, Calif., company, PanelMount is a plug-and-play 16.1-in. color monitor that is three inches deep. It has 1,280- by 1,024-pixel resolution and 262,000 colors.

PanelMount was designed for rugged environments. It is sealed in steel and has a polycarbonate shield to protect the display. It weighs 20 pounds.



Dolche's PanelMount monitor

Pricing starts at $9,000.

▶ *Dolche Computer Systems*
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Intergraph Corp. has introduced InterServe 650 and 660, Intel Corp. Pentium Pro processor-based servers for Windows NT.

According to the Huntsville, Ala., company, the servers were designed for data-intensive, mission-critical activities, including online processing, management workflow systems and high-volume Internet traffic. They feature up to four Pentium Pro processors, 4G bytes of memory, 12 Peripheral Component Interconnect and three Industry Standard Architecture slots and 9G-byte drives with a maximum disk capacity of up to 1T byte of storage.

InterServe 650 features two Pentium Pro processors and three 4G-byte drives. Pricing starts at $50,200. InterServe 660 has four processors, three 9G-byte drives. Pricing starts at $64,800.

▶ *Intergraph*
(205) 730-3000
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Pentium Pro

CONTINUED FROM PAGE 45

$6,000, but with the new systems, prices are dropping below $4,000. That may increase the number of companies shifting to Pentium Pro servers, McCarron said.

The price of system memory also has dropped, making the Pentium Pro systems more alluring to IS managers, McCarron said. With additional system memory, the Pentium Pros will show even greater throughput compared with standard Pentium servers. For instance, Dell's new PowerEdge 2100 achieved a price/performance score of $32 per RPMark, according to Client/Server Labs in Atlanta. Previous Pentium-based systems were much slower, company officials said.

Analysts said they expect most of the other server vendors, including Compaq Computer Corp. and IBM, to offer low-end Pentium Pro-based servers later this year.

The usual suspects

The Top 4 PC server vendors have held their places for several quarters now, says market researcher International Data Corp.

1. Compaq Computer
2. IBM
3. Hewlett-Packard
4. Digital Equipment

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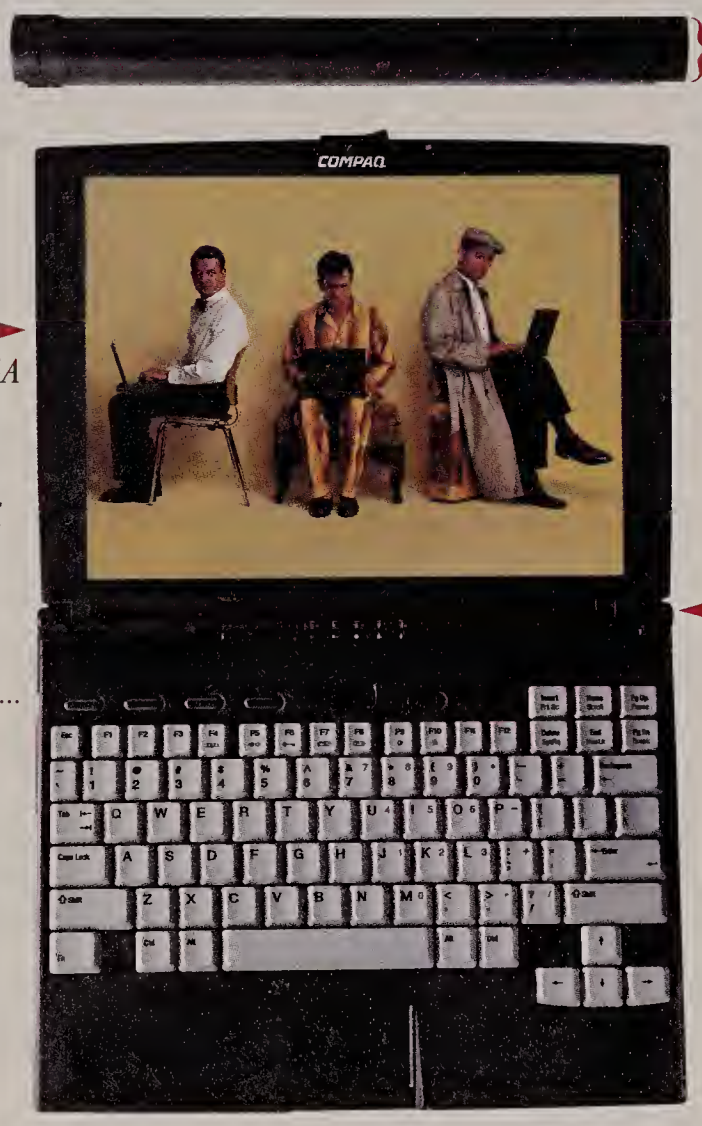

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Experts offer advice on how to avoid downloading hostile components, 54

Software

Exchanging Notes

By Tim Ouellette

Bill Hankard could just see it: loads of money, time and customized programming needed to move data from Point A to Point B.

That's because Hankard, director of application infrastructure at Tessera Enterprise Systems, was dealing with a migration from Lotus Development Corp.'s Notes to Microsoft Corp.'s Exchange.

And the data that employees at the Wakefield, Mass., firm had stored in Notes databases would be trapped, unreachable and unreadable from Exchange's public folders. Those folders are the equivalent of Notes databases, but they store data in messages instead of Notes' file storage format.

"We have a good year's worth of Notes databases we have created and populated," Hankard said. "I honestly did not know how we were going to do this."

But now he has a jump on the job. The Mesa Group, Inc. in Newton, Mass., this week is shipping JumpStart, software that converts and transfers Notes data, hyperlinks, document attachments and objects to Exchange folders and vice versa.

Tessera is moving to Exchange for two reasons: The company is already running Microsoft's Windows NT Server (the only platform for Exchange), and the firm isn't taking full advantage of Notes' myriad groupware capabilities anyway.

> "I think [JumpStart] will do 90% to 95% of the work."
>
> —*Bill Hankard, Tessera Enterprise Systems*

Moving to one platform for messaging and basic groupware, which is also already integrated with NT, will save administration headaches for the company, the information systems director said.

But for other companies that choose to run Notes for groupware development and Exchange for messaging, JumpStart can help the products live together for a long time.

That seems to be the trend. Tom Austin, an analyst at Gartner Group, Inc. in Nashua, N.H., said he expects most companies will see cohabitation of the two products for the next three to five years.

There are about 6 million Notes users. Early estimates released in April put Exchange at more than 2 million users by year's end. But that number may be reduced due to concerns about the ability to scale and manage Exchange [CW, Aug. 12].

Although many vendors have tackled electronic-mail conversion, no one really knew how easily groupware data — such as sales tracking databases — would transfer.

Hankard, therefore, faced lots of customized programming and weeks of chasing down the resulting bugs and errors that would occur with the different data types in Notes. But now, "I think [JumpStart] will do 90% to 95% of the work," Hankard said.

JumpStart does this work automatically, performing bidirectional replication between the Notes and Exchange databases.

In essence, JumpStart does what other E-mail gateway and conversion products have done: It transfers data from one specific format to another specific format.

Trims development time

Much of that is done by providing equivalent Exchange electronic forms for most standard Notes databases. That limits the extra development users would have to perform to move the data themselves.

But customized databases will still require extra work, and no other product besides Notes and Exchange can take part in the conversions.

By the end of the year, Mesa will add the ability to transfer Internet Usenet groups to either product. JumpStart costs $7,500 per Windows NT or Windows 95 server.

SAP throws mix-and-match party

Vendors roll out tools to enhance SAP's new R/3 enterprise system; Business Framework Architecture allows use of separate components

By Julia King

SAP AG's new Business Framework Architecture for R/3 users includes plenty of room for software from third-party vendors.

And not surprisingly — given SAP's vast market presence at more than 8,000 user sites — plenty of vendors are eager to roll out products that work under the R/3 enterprise system's new "componentized" design.

◀ Strategy from the show

SAP's strategy for letting users mix and match third-party software with its R/3 enterprise system centers on BAPIs. SAP is developing the interfaces in conjunction with its customers and partners and will publish them by year's end.

SAP formally announced the new product architecture at the Sapphire '96 users conference two weeks ago in Philadelphia. Under the new design, SAP will sell its R/3 software in the form of dozens of independent software components that users can mix and match with non-SAP software.

The R/3 software is now sold as a single system that features a full range of applications, including order entry, financials, manufacturing and logistics. Splitting it apart will allow users to enhance the system on a part-by-part basis rather than replace an entire R/3 system each time there is a new release.

Under the new architecture's business application programming interfaces (BAPI), users will be able to more easily mix-and-match third-party applications with R/3 without having to build custom connections for each new piece of software.

What follows are highlights of the more than two dozen third-party products announced at the recent users conference. All the products, including SAP's forthcoming R/3 add-on components, will use the new BAPI technology to link to users' core R/3 systems.

- **Lotus Development Corp.** in Cambridge, Mass., demonstrated Version 2.0 of its Lotus Connection for R/3. It lets users access and share R/3 data from a Notes or Lotus SmartSuite desktop. The software is distributed free as an integrated feature of R/3, starting with R/3 3.0D.
- **Haht Software, Inc.** in Raleigh,

SAP, *page 54*

Hostile applets call for caution

By Sharon Gaudin

Hostile takeovers aren't just the stuff of Wall Street moguls and summer movies. They're also the stuff of bad software components and IT nightmares.

There has been been a lot of recent talk about the problems of downloading "hostile" components. Now information technology managers and analysts offer advice on fending off the system nightmares caused by these applets while cruising through the World Wide Web.

Security issues surrounding Java applets and, more recently, Web components based on Microsoft Corp.'s ActiveX technology, are prompting concern in the IT world. Applets and components, which are reusable software chunks, are gaining popularity because they speed up and ease development. But a component with a built-in virus could wreak havoc with a company's entire system — it could shut down computers, eat up memory, change information stored in databases or plant viruses that could pop up months later.

Safe surfing tips

- Don't download components unless you know who created them
- Download new components or applets to a computer not connected to your network
- Set up a secure repository where tested and safe components can be stored
- Limit the number of people who can download components or applets
- Make sure your browser is set to automatically warn you before anything is downloaded
- Regularly run virus checks
- Regularly back up your system

Source: Industry experts

ActiveX components are often considered more powerful — and more dangerous — than Java applets because ActiveX components sit on the operating system instead of in the browser. Anything a Windows application can do, an ActiveX component also can do. This gives developers with hostile intentions a lot of power over a company's system.

A Microsoft spokesman said the company is working to tighten security. But until those security questions are answered, it is up to every business to protect itself.

"Hostile components are a problem that are not going to go away, but, on the other hand, it shouldn't stop you from doing things," said David Kelly, an analyst at Hurwitz Group, Inc. in Newton, Mass. "When you're out cruising the Internet, it's like the Wild West. You've got to protect yourself in a variety of ways."

For now, the only way to be 100% safe from these security breaches is to abstain from downloading anything. That, however, won't fly with most developers who want the latest and greatest at their fingertips and are tempted with these components that are easily and freely downloadable from the Web.

Most of the components up there now are virus-free, and many come directly from Microsoft. But other developers post their own components, and downloading them is a gamble that many developers can't resist. For them, the answer lies in knowing the author of every component and resisting the temptation of the unknown.

Resist temptation

Kelly explained that developers should never download a component that isn't signed by a known author. ActiveX has a system of digital signatures that can be set to warn users before components are downloaded and indicate a component's source. The key is to not be tempted to bypass that warning system.

"There is a temptation to just go ahead and try it," said David Schrier, a project manager for Rye, N.H.-based Black Diamond Consulting, Inc.

To protect himself, Schrier also takes precautionary steps to deal with any hostile viruses he may download. Besides daily system backups and virus checks, he also downloads all components onto a stand-alone computer so nothing on his network could be harmed.

Tom Obrey, chief operating officer at PixelMedia, Inc. in Portsmouth, N.H., protects his system by keeping the power to download all to himself.

"Being a technology-oriented company, we spend every moment of every day on a machine ... and we can't have some silly components mucking with them," said Obrey, who maintains a central repository for tried-and-trusted components.

Batten down the hatches

Researchers found a series of security flaws in Java that Sun Microsystems, Inc. has since fixed in its January release of the programming language.

In the ActiveX realm, a developer has been demonstrating online (www1.halcyon.com/mclain/ActiveX) an ActiveX component that can shut down a computer if it is downloaded from the Web with Microsoft's new Internet Explorer 3.0 browser [CW, Aug. 19].

Microsoft officials said they are working to close the security gap caused by this so-called hostile component. — *Sharon Gaudin*

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SAP throws mix-and-match party

CONTINUED FROM PAGE 53

N.C., announced an Internet application development environment. It lets R/3 users create Web-based programs that directly interface with a company's existing R/3 system. Using the new development tools, a pharmaceutical company, for example, could allow physicians to access information about medications via the Internet. Pricing is $2,495 per central processing unit and $995 per user.

Holiday present

SAP will begin delivering the new Business Framework Architecture with R/3 3.1, which is scheduled to ship in December.

- **New Dimension Software** in Irvine, Calif., announced an R/3 version of its Control-M production control and scheduling package. The software automates scheduling of R/3 reports written in SAP's ABAP programming language. It also coordinates report production in mixed computing environments with both R/3 and legacy systems. The Control-M option for R/3 software is available now. Pricing begins at $5,000.
- Also on the Internet front, **OneWave, Inc.** in Cambridge, Mass., demonstrated its OneWave Extension for R/3. Priced at $25,000 per developer, it lets users of R/3 Versions 2.2 and higher create Internet and intranet applications that are integrated with R/3 enterprise data.

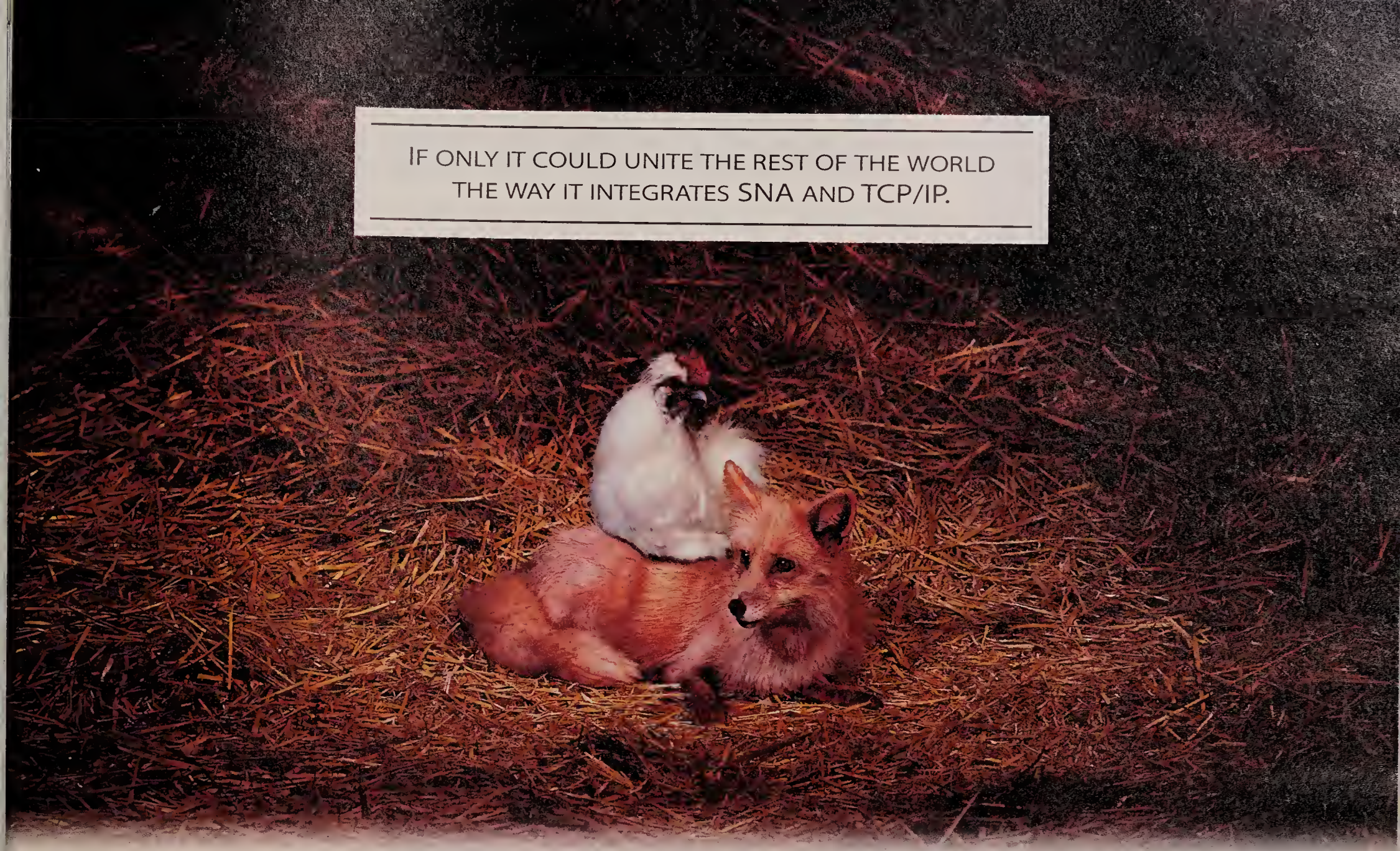
SAP officials said the company will build and sell its own set of packaged R/3 Internet applications. These include applications for cross-industry business requirements, such as employee access to personnel and benefits information. The first Internet programs are scheduled for December.

Target applications

SAP also will develop different industry-specific applications, initially targeting users in the health care and financial services businesses, officials said.

SAP Vice Chairman Hasso Plattner said users can choose the SAP or third-party applications that best suit their requirements.

"We want to create a functionality competition," Plattner said.



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Mac memory booster gets an upgrade

But performance worries, potential system conflicts leave some users wary

By Lisa Picarille

Triple the memory on your Macintosh for about $60.

That's what Connectix Corp. is offering with an updated version of its best-selling Macintosh-based memory management utility. The RAM Doubler 2 utility offers settings that let users triple the memory on their computers when running native Power Macintosh applications.

The utility accomplishes this increased memory capacity by reclaiming unused memory from open applications to run additional applications. Version 2 also takes memory that is unlikely to be used again and compresses it, said officials at the San Mateo, Calif., software company.

Ram Doubler 2 uses a new proprietary compression technology that the company claims runs twice as fast as the previous version. Version 2 also includes a new control panel that streamlines the process of adjusting memory setttings.

This type of software memory utility is popular because it lets users run more applications than the physical RAM allows. Although the price of physical memory has dropped to about $60 to $70 per 8M bytes of RAM from $320 last year, some users of older Macintoshes may not have enough single in-line memory module slots available to add more physical memory to their systems, observers said.

However, one user said the lower price of memory and the fear of potential system conflicts have him resisting software memory management utilities.

> "We discourage our users from increasing memory through software solutions because of potential conflicts with other applications."
>
> —*Mark Stelzner, Gruener & Jahr*

"Purchasing these types of products was more of an issue a year ago when memory was expensive. But now physical memory is so cheap that it's almost a consumable item," said Mark Stelzner, editorial publishing director at Gruener & Jahr USA Publishing in New York.

"We discourage our users from increasing memory through software solutions because of potential conflicts with other applications," he said. "And when older machines can't be upgraded with physical memory, we just cascade them down to less demanding applications."

Watchful eye

Other users said they were skeptical of software solutions that claim to increase memory because products of this ilk, particularly for the Windows platform, have received serious criticism recently.

For example, Syncronys SoftCorp. in Culver City, Calif., came under legal fire and had to pull its SoftRAM 95 product off the shelf because it didn't live up to its claims of significantly increasing RAM.

RAM Doubler 2 has a suggested retail price of $99 and an estimated street price of about $60. Users of the previous version of RAM Doubler will get $25 off the purchase price when they upgrade to Version 2.

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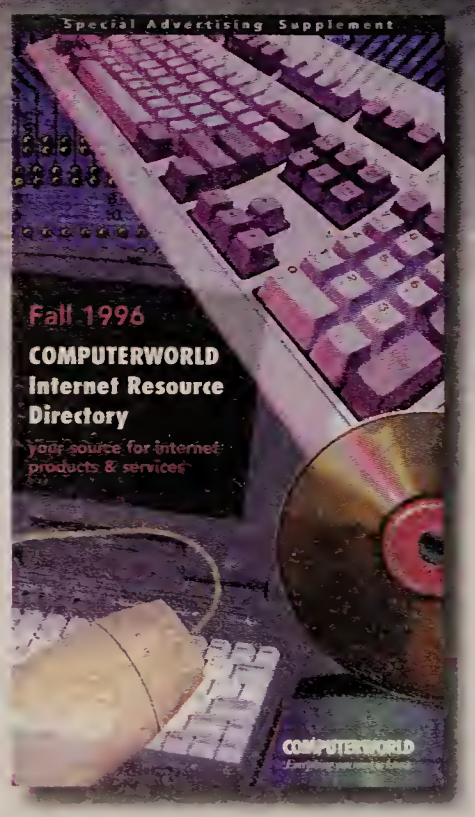

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SGML tool: One document, several formats

By April Jacobs

Microstar Software Ltd. is launching a new version of its SGML software called Near and Far Author to make it easier and cheaper for companies to manage and publish their documents in a variety of formats.

Standard Generalized Markup Language (SGML) is an authoring language that lets users publish information in different formats. It is a close cousin to the now popular, but more limited, Hypertext Markup Language (HTML). The software saves users authoring time by letting them transform documents into several formats without doing it by hand.

After a document is created, a user can save it as a Word document or an SGML document with Microstar's Near and Far Author 2.0 for Microsoft Corp.'s Word.

The document can also be integrated with Documentum, Inc.'s document management system. Users can publish into document type definitions and HTML formats, as well as store, manage and distribute documents as print or World Wide Web pages within the document management system.

Providing answers

At Eastman Kodak Co. in Rochester, N.Y., for example, Near and Far Author is used to create documents based on customers' frequently asked questions (FAQ). The documents are made available on the Kodak Web site (www.kodak.com) and in a printed version.

"This way, we create one document and put it out in several formats," said Terry Badger, director of technical information at Kodak. That way, support staff can refer people with questions about Kodak products to an automated facts system, which would give a detailed and uniform response to their questions.

"If you can trim two or three minutes off of a call in your call center, that becomes money," he said.

Badger, who deals with documents that are sent to customers, said he is considering the document management feature in the new version because it will let him communicate better with his document content developers while they are working.

Badger said Kodak staff spends a lot of time creating hot links and working on content creation and navigation. He said he would like to automate the process.

Good enough

Badger said he is generally happy with the current version of Near and Far Author, but he questions its ability to handle documents that are more complex. But he said for average documents and management it is appropriate.

David Yockelson, a vice president at Meta Group, Inc. in Stamford, Conn., said Kodak is an example of a company where content is received in a variety of ways and must be republished in different formats to support customers. That is a good way to employ document management and SGML, he said.

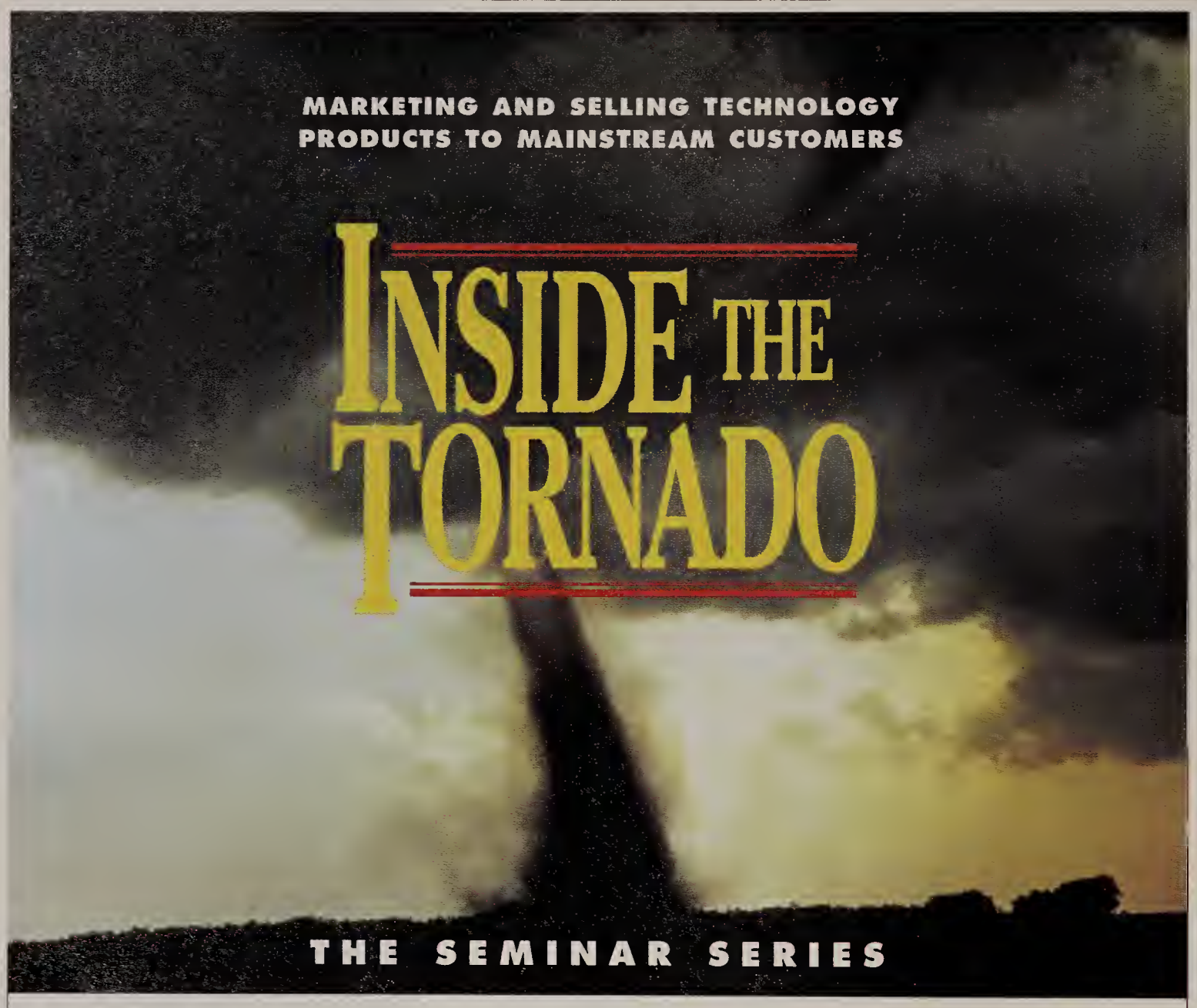
Yockelson criticized Microstar for compromising some performance for a gain in user friendliness.

"I think they're trying to provide an environment where you can do a lot more in a friendly fashion. And on a grand scale, that's a reason for them to be heading into a mass market," Yockelson said.

"Once it's managed properly, it's very useful," he said.

Solid market

The SGML market, including software licenses and consulting revenue, is estimated at between $50 million and $75 million by the end of this year, according to David Yockelson, a vice president at Meta Group.



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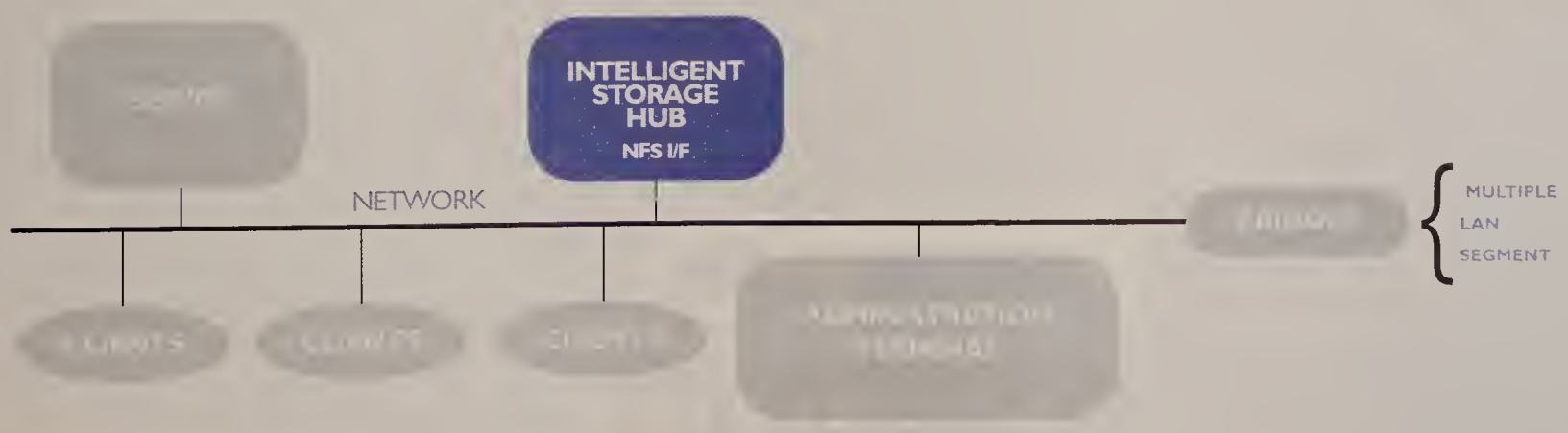

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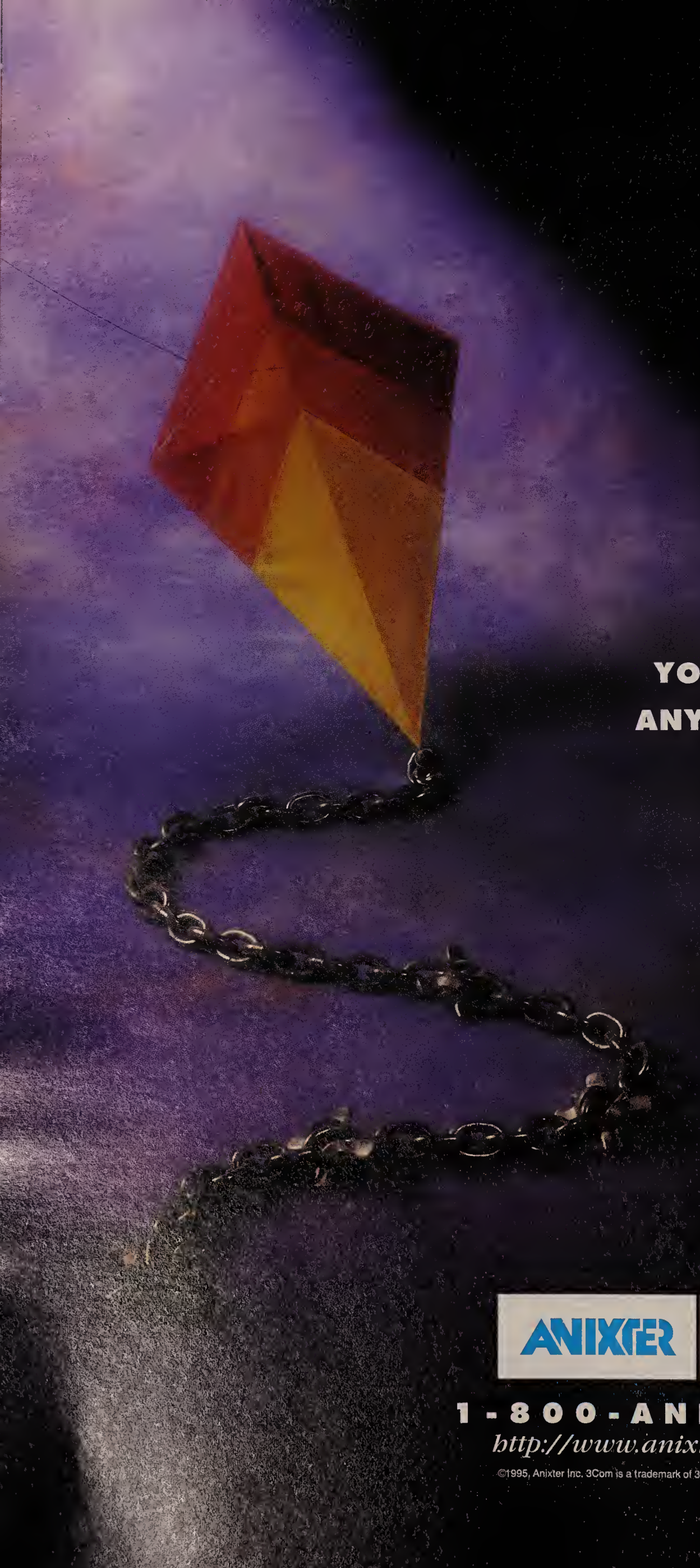

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Users gain from Madge switch enhancements, **66**

The Enterprise Network

Growing vines

Vines 7.0 is for shops that want to maintain their investment in Vines or integrate Windows NT Server into the mix

Availability: Oct. 1

Price: $9,995 for 100 users

Includes: StreetTalk for NT directory, improved file system and TCP/IP protocol support

Banyan to fortify Vines

By Tim Ouellette

Banyan Systems, Inc. won't keep users of its Vines network operating systems hanging.

Vines 7.0 will ship early next month, and it won't be the last upgrade, company officials said.

The Westboro, Mass., firm has beefed up Vines 7.0 to handle larger file systems beyond the previous 2G-byte limit.

Version 7.0 also supports long file names, allows more server configuration controls and improves support for TCP/IP as the network protocol.

But the biggest selling point to keep users swinging with Vines is the release of Banyan's StreetTalk Directory Services for Windows NT. "We are a Vines shop with 210 Vines servers," said Brian Rudowski, a network specialist at Public Service Electric & Gas Co. in Newark, N.J. "Now we are looking at StreetTalk for NT. Right now, NT's domain services are not a complete solution."

Network operating systems

Although users have been integrating Windows NT servers with Vines networks, NT doesn't offer strong directory service. Instead, users must manage NT domains — with the promise of an enterprise directory by next year.

Stan Schatt, an analyst at Computer Intelligence in La Jolla, Calif., recently said Vines won't lose a lot of ground to NT just yet because of NT weaknesses such as directory services.

Vines 7.0 will cost $9,995 for a 100-user license.

Overnight summation

Kaspia automated network management suite gives an early warning of problems

By Patrick Dryden

Start-up Kaspia Systems, Inc. last week launched an automated network performance monitoring suite that acts like a smoke detector to give managers early warning of problems.

The Kaspia Monitoring System gathers available statistics overnight from managed devices throughout a network.

Then it reports the highlights and details via the widely accessible World Wide Web.

Proactive system

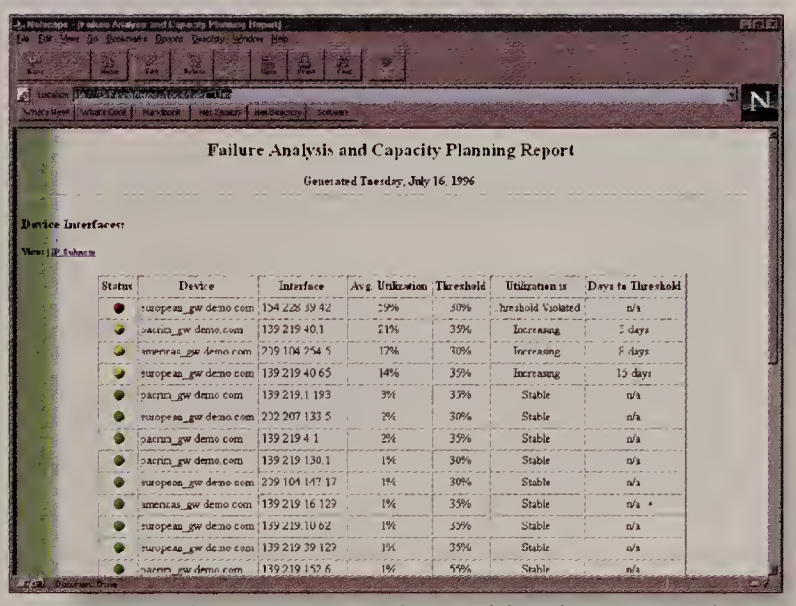
A few vendors, such as 3DV Technology, Inc. in Nashua, N.H., have introduced early-warning monitors, but analysts called Kaspia's system more complete.

Such help lets harried network managers start acting proactively, by allowing them to examine trends and abnormalities instead of having to react to failure alerts.

"We like the idea of overnight reports so we know some problem may be on the way," said Tom Shoop, director of systems engineering at Western Union Information Services in Paramus, N.J.

Some vendors offer these advisories with Unix-based tools, but Kaspia seeks a broader range of users by requiring only a Windows NT platform.

A combination of simplicity, automation, Web reporting and Windows NT support led UB Networks, Inc. in Santa Clara, Calif., to adopt the Kaspia Monitoring System for resale to its users, said officials from each company.



The Kaspia Monitoring System *works overnight to inspect networks, gather statistics and point out potential problems*

Western Union learned about Kaspia's tools through its hub vendor. The money transfer business wants these tools to collect vital statistics from devices at remote call centers.

That will "give us graphical profiles of the network and let us watch performance trends over time," Shoop said.

A daily summary of performance quirks, called the SmartReport, should prove "incredibly helpful" to IS managers who are trying to prevent network difficulties, said Sue Al-

Kaspia, *page 62*

Novell brings tech support to Web

By Laura DiDio

In a bid to broaden service and support, Novell, Inc. recently launched CNE Net, a Web site designed to give NetWare users a constant flow of product information and technical support.

The aim of CNE Net is to go beyond the textbook information users get when they take a Certified NetWare Engineering (CNE) class, said William Donahoo, senior director of product marketing at Novell.

"CNE Net picks up and continues when the formal CNE classes end. This is another channel to provide network administrators with support by giving them the latest information on NetWare enhancements, patches and fixes," he said.

Administrators who have been certified by Novell can join CNE Net free, Donahoo said. CNE Net members can access the World Wide Web site and a chat room. Members also will get select beta-test and prerelease versions of pending releases of NetWare and current versions of the network operating system. Other perks include specially discounted technical support — CNE Net members may receive as much as 50% off all technical support calls and online incidents and a 15% discount off admission to NetWare User International and CNE conferences.

Members of CNE Net receive the following benefits:

- Access to the CNE Net Web site, located at www.novell.com/cne
- Beta-test products and early releases
- Automatic distribution of patches and fixes
- 50% discount on technical support calls and online incidents
- Access to free and discounted technical seminars and programs
- Free subscription to *NetWare Connection* magazine

Users and analysts applauded the move. They said it puts more muscle behind Novell's service and support, which has been considered something of a weak spot for several years.

"It sounds good. Anything Novell can do to disseminate [technical] information . . . and make NetWare more accessible is a boon for users like myself," said Josh Turiel, director of information services at Ad Life Marketing in Norwood, Mass.

Jon Oltsik, an analyst at Forrester Research, Inc. in Cambridge, Mass., said programs such as CNE Net are "must-dos" for Novell to bolster users' confidence. In recent years, Novell's technical support — or lack thereof — has been a sore spot for some users. "Moves like CNE Net are an indica-

Novell, *page 66*

Kaspia management suite uncovers problems

CONTINUED FROM PAGE 61

drich, an analyst at Patricia Seybold Group in Boston.

This report reminds operators what to check and where to focus, Aldrich said. "An IS manager can hand that report to the network experts and tell them to investigate and check off each item by the end of the day."

Kaspia Systems in Beaverton, Ore., delivered its tools last week.

Pricing for the tools starts at $14,500 for software that can track up to 32 devices such as hubs, routers and Remote Monitoring probes.

Kaspia Monitoring System requires a hefty PC platform — one equipped with a 133-MHz Pentium processor, 32M bytes of memory, a 1.6G-byte disk drive, CD-ROM drive and high-resolution monitor.

But many managers of growing networks call these PC-based management systems cheaper and easier to run than Unix workstations.

Kaspia's launch gives buyers an alternative to the popular Unix-based Network Health tools from Concord Communications, Inc. in Marlboro, Mass., analysts said.

While their performance monitoring approach is similar, Kaspia is positioned more to "the LAN side" for smaller networks of routers and hubs than Concord, which "drives the WAN side quite successfully," said Brian Burba, a management analyst at International Data Corp. in Framingham, Mass. "On both sides of the router, the need is equally large for simple, automated reporting about what's not working well or nearing failure," Burba said.

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New Products

Infinite Technologies has announced Infinite InterChange.

According to the Owings Mills, Md., company, Infinite InterChange bridges the gap between proprietary electronic-mail systems and open Internet standards to provide universal remote access to LAN-based E-mail systems from anywhere. It can be installed as an enhancement to an E-mail platform or as a complete, Internet-based E-mail product. It can also function as a Network News Transport Protocol server.

Pricing for Infinite InterChange starts at $399 for 10 users.

▶ *Infinite Technologies*
(410) 363-1097
www.ihub.com

D-Link Systems, Inc. has introduced ProFast 8-Port Hub.

According to the Irvine, Calif., company, ProFast 8-Port Hub is an unmanaged Fast Ethernet hub designed to give data-intensive workgroups an entry into 100M bit/sec. Fast Ethernet. It features an uplink port for cascading a maximum of two hubs and increasing port density to 15 ports within a limited space. This lets network managers increase workgroup speed and performance.

ProFast 8-Port Hub costs $995.

▶ *D-Link Systems*
(714) 455-1688
www.dlink.com

McAfee Associates, Inc. has introduced VirusScan 2.0 for Macintosh.

According to the Santa Clara, Calif., company, VirusScan 2.0 for Macintosh is an antivirus software package that protects against the latest viruses, including macro conventional and Trojan horse viruses. It lets administrators distribute task icons as electronic-mail attachments with the latest virus updates.

It has several scanning options, configuration flexibility and automatic virus removal.

Pricing for VirusScan 2.0 for Macintosh starts at $49.

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Users gain from Madge switch enhancements

By Bob Wallace

Token Ring switching pioneer Madge Networks, Inc. last week announced major enhancements to its flagship switch that will make it a far more flexible center for internal building and campus backbone networks.

The business benefit for current and prospective Madge users is that they won't have to buy more equipment to create a more versatile enterprise network.

Madge developed the Smart Ringswitch years ago to give IBM shops that encountered congestion on their shared 4M and/or 16M bit/sec. Token Ring LANs a performance boost via dedicated bandwidth.

Bandwidth conservation

One enhancement lets network managers conserve bandwidth by restricting the broadcast of unnecessary network traffic. Another adds support for fiber cable. A third lets users monitor the performance of the switch, and a fourth lets users link it to high-speed networks.

John Ferrier, distributed systems manager at Scottish Equitable, said the new feature set gave him "the flexibility to design a resilient and manageable network." He said the fiber support was beneficial because his firm uses fiber and twisted-pair wire.

The market for Token Ring switches is showing healthy growth as users gradually replace shared-media Token Ring hubs with higher-performance switches, according to industry research (see chart).

One key enhancement is called Active Broadcast Control (ABC), which reduces unnecessary network traffic such as the broadcast data continually sent by routers over wide-area networks.

Users get performance monitoring via Remote Monitoring (Rmon) support. It lets network managers monitor switch performance on a per-port basis. That helps them spot potential problems and isolate existing ones.

Support for fiber cable in user networks comes in the shape of the Fiber Token Ring Module. This enables users to support fiber and shielded and unshielded twisted-pair building wiring, which means they won't have to replace their existing fiber with twisted-pair wire.

Also due from Madge this month is a Fiber Distributed Data Interface (FDDI) Uplink that lets network managers tie the Smart Ringswitch to FDDI backbone networks and to centrally located high-speed servers.

It can also be used to tie together multiple Smart Ringswitches to form expansive backbone switch networks.

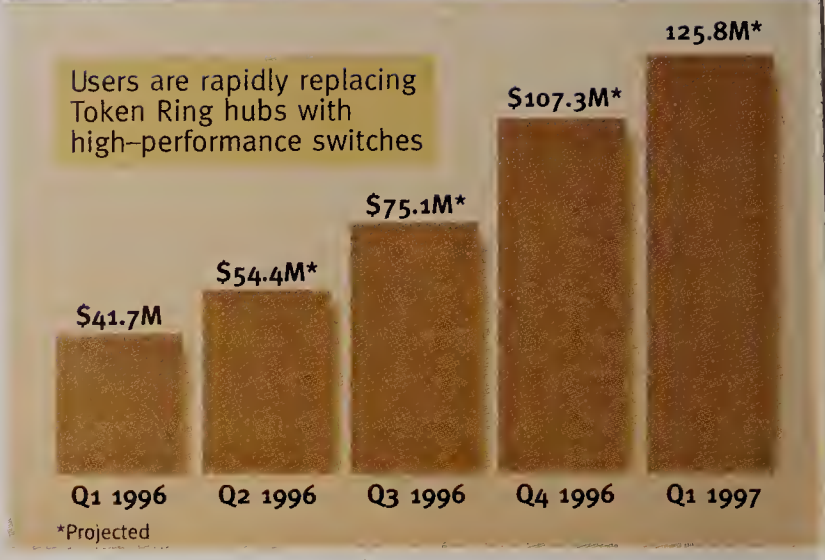
Previously, users needed to add another stand-alone device to link the systems.

Madge has additional plans for the Asynchronous Transfer Mode (ATM) Uplink, which would provide the same functionality as the FDDI Uplink, but at 155M bit/sec. instead of FDDI's 100M bit/sec.

ABC now ships with every new Smart Ringswitch. The fiber module costs $4,450; Rmon functionality costs $1,450. The FDDI Uplink costs $5,950. All three are available now.

The ATM Uplink will cost $5,950 and will ship in the first quarter next year.

Worldwide Token Ring switching revenue



Source: The Dell'Oro Group, Menlo Park, Calif.

Briefs

Road warfare

Road warriors are accustomed to communications and connectivity problems, but international travel poses a particular challenge. Now, **Xircom, Inc.** in Thousand Oaks, Calif., has shipped its answer — the International Modem Travel Kit, which costs $129. The kit, which is packaged in a travel pouch, contains 12 international telephone adapters that convert connectors to a standard RJ11 telephone jack. The kit also includes a guide to international connectivity with advice on international communication and travel. It lets Xircom PC Card modem users connect to 160 phone systems worldwide.

D-Link slashes prices

Switch vendor **D-Link Systems, Inc.** in Irvine, Calif., recently announced plans to slash by half the price of its Fast Ethernet hub and workgroup switches. The price of D-Link's ProFast 10/100 switch, which has four switched Ethernet and one switched Fast Ethernet port, will be $995, a 50% reduction. Its ProFast 12-port Fast Ethernet hub will cost $1,295, down 28% from $1,795. The vendor's eight-port switched Ethernet hub will cost $1,195, a 25% price cut.

Artful Windows NT 4.0

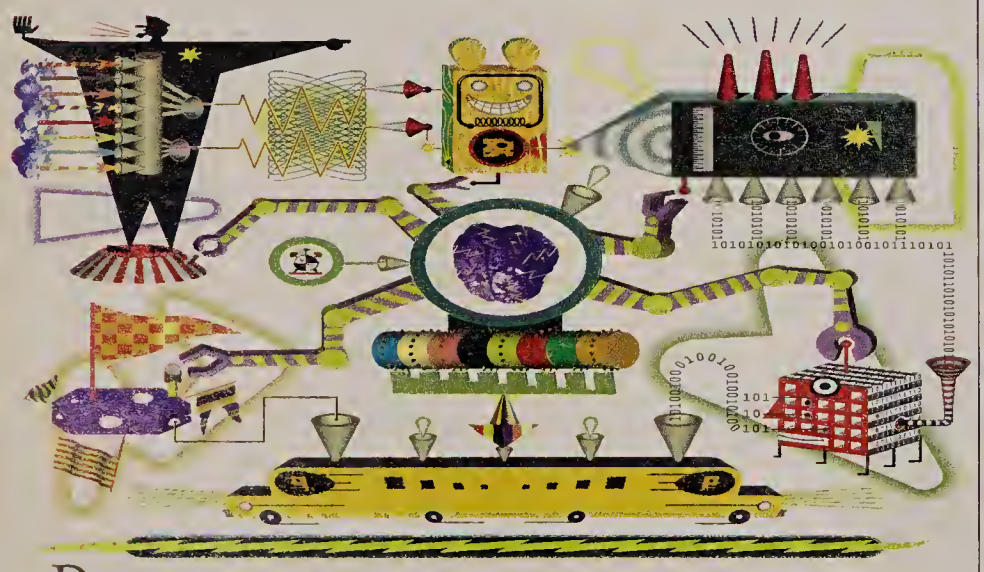
Artisoft, Inc. in Tucson, Ariz., by year's end will release versions of its LANtastic peer-to-peer network operating system and its Insync CoSession Remote, a remote access package, said company official Olivier Zitoun. Both will support Microsoft Corp.'s Windows NT.

Workgroup manager expands

Backup functions and the latest version of Windows NT are supported by a new workgroup management tool kit from Boston-based **Seagate Software**, a subsidiary of Seagate Technology, Inc. Version 2.0 of the Desktop Management Suite (DMS) includes Backup Exec for managing data on various operating systems at workstations and on Windows NT and Novell, Inc. NetWare servers. DMS supplies remote control, inventory and asset management, software distribution and virus protection. Pricing for the Desktop Management Suite starts at $1,495 for 50 users.

Maxed management

NCR Corp. in Dayton, Ohio, and **Maxm Systems Corp.** in McLean, Va., have teamed up to market Maxm's Max/Enterprise management software to users of NCR's WorldMark servers. The deal complements NCR's software for managing central or remote Unix systems because Max/Enterprise automates fault management for internetworking gear and nonstandard devices.



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Novell brings text support to Web

CONTINUED FROM PAGE 61

tion that the company is beginning to really pay attention to businesses' grassroots concerns," he said.

Turiel, who also heads the Boston chapter of the NetWare Users Group, said many network administrators — him included — don't have NetWare certification.

"A large proportion of network administrators are too busy doing their jobs and minding the network to take the time to get CNE certification," Turiel said.

"However, the inception of a program like CNE Net tells me that Novell is getting steadily better at delivering aftermarket service and support. And I'm certainly interested in getting a 50% discount on technical support calls," he said.

"Novell's technical support, until now, has been a real search expedition. NetWare fixes and patches always seem to be hidden in these obscure forums, and it takes hours to find them. If CNE Net can solve that problem and quickly get me fixes and enhancements, I'd be a very happy administrator," said an MIS manager at an East Coast financial firm, who requested anonymity.

Transaction processing vendors make good on 'net promises, **70**

The Internet

Log-on reason No. 96

H & R Block subsidiary to launch new Web site, giving small banks a shot at 'net commerce

By Mitch Wagner

A new service designed to let small banks conduct personal finance business with consumers over the Internet is on its way from a subsidiary of tax preparer H & R Block.

Block Financial Corp. in Kansas City, Mo., plans to launch the Conductor site in the fourth quarter. The service will provide a one-stop shop for consumers, who will be able to log in to the site and pay bills and perform account transactions at multiple banks.

Block's Jake Geller: *switching from Netscape server software to Microsoft's Internet Information Server will mean fewer vendors to deal with*

More revenue

The business value for Block is additional revenue and market cachet. Block will charge banks to participate in the program, and it will attract higher-income customers than those who currently use Block's tax-filing service. Consumers will be charged fees for services such as bill payment and financial information.

Banks will be able to use Block as a fast and easy means of getting themselves set up for Internet commerce. Block plans to target the service to small banks that lack the information systems resources of the half-dozen or so large banks that are pioneering Internet commerce.

"This allows small banks to essentially outsource transaction processing and maintenance of their [World Wide] Web servers," said William P. Anderson, president of Block Financial.

Bill-payment services are nothing new on the Internet. BankAmerica Corp. and Wells Fargo & Co. both launched similar services this summer. But those services are tied to a single bank, which doesn't help consumers who have accounts, credit cards and loans at multiple banks.

Answer for small banks

The Block service is also cutting-edge because it will offer an outsourcing solution for putting small banks on the 'net.

"They're creating a financial mall that's simple to navigate and simple to use," said Phoebe Simpson, an analyst at Jupiter Communications, Inc. in New York. The key to Block's success will be whether it can sign up a sufficient number of banks to achieve critical mass, she said.

Block hopes to sign 100 to 200 banks by launch time. The service is being beta-tested by Mascoma Savings Bank, a 13-branch chain in New Hampshire and Vermont with $345 million in assets.

"We know that in our area, there's a lot of interest from our customer base

Block, *page 70*

Users pounce on Navigator for OS/2

By Kim S. Nash

High fives went up among many OS/2 users when Netscape Communications Corp. last month announced it will offer an OS/2 edition of the popular Navigator Web browser.

Several users said they would jump on the new product.

"Netscape looks better to me" than IBM's own OS/2 browser, WebExplorer, said Richard Schafer, an avid OS/2 user and owner of MailBook, Inc., an electronic-mail company in Houston.

Not only will they get market-leading World Wide Web software, but OS/2 users who upgrade to the forthcoming "Merlin" release of the operating system will get the browser for free. Merlin is due Sept. 25.

But others crabbed that Netscape and IBM dragged their heels. And some OS/2 users decided they couldn't wait.

IBM's WebExplorer was nice, but many other non-Web development and systems management utilities don't run on OS/2, said William Clardy, information systems manager at

OS/2, *page 68*

Now hear this

The forthcoming OS/2 version of Netscape Navigator has a speech feature that lets Pentium users surf the Web via voice commands

PRODUCT	IN BETA	FINAL SHIPMENT	JAVA SUPPORT
Navigator 2.02 for OS/2	This month	November	Extra fee not yet determined
Navigator 4.0 for OS/2	This fall	By year's end	Free

Virus protection

The end of summer means virus season is approaching. For humans, that is. For computers, viruses can strike year 'round. But despite all the panic and arm-waving about the dire threat of computer viruses, most of them do very little damage – and the damage can be still less if you catch them early. Fortunately, the Internet abounds with tools for that.

STILLER RESEARCH, at **www.stiller.com,** makes the shareware Integrity Master – unusual in the line of antivirus products. For one thing, it runs on DOS but can run in DOS mode on all flavors of Windows and OS/2. It can detect the extremely rare viruses that run on those operating systems (most viruses attack DOS). The DOS compatibility means it's built for speed rather than comfort.

It's still fairly easy to use, with pull-down menus and context-sensitive help. Integrity Master can also be set to measure the vital statistics of every file on your hard drive and then return to look for changes. It's a valuable tool to test for tampering by hackers or to look for the effects of viruses.

MCAFEE ASSOCIATES, INC. has shareware versions of its antivirus software at **www.mcafee.com.** The software runs on DOS, Windows 3.x, Windows 95 and Windows NT, OS/2, Macintosh, Solaris and the public-domain Linux. The company also has software to automatically scan for the presence of viruses in E-mail or on the Web.

JPD DATASÑKERHET AB'S F-PROT PROFESSIONAL shareware is available for DOS, Windows 3.x, Windows NT, Windows 95 and NetWare, at **www.infoscandic.se/f-prot/.** The company also has a free scanner for the Hare virus, due to hit Sept. 22.

TCT-THUNDERBYTE CORP.'S THUNDERBYTE shareware is at **thunderbyte.com.** It's available for Windows 3.x, Windows 95, DOS and Microsoft Exchange.

– Mitch Wagner

Corporate IS frets about Java security, frowns on applet use

By Frank Hayes

Amid concerns about Java security, some corporate IS shops are cutting off their users from Java applets on the Internet.

Last month, aerospace giant The Boeing Co. in Everett, Wash., told its 10,000 Internet users to disable support for the small programs written in Java, Sun Microsystems, Inc.'s Internet development language.

"It's not just Java. It's our policy for employees not to download software into a Boeing environment from any source outside the company without proper precautions," said Bob Jorgensen, a Boeing spokesman.

"We told our employees, 'until we finish all our work on it, when you're out browsing, have Java disable as the default position.' That still gives them the ability to use it when they're at the site of a known vendor or on our intranet," he said.

Better safe than sorry

Information systems shops are concerned because researchers at Princeton University have found flaws in Java security that could give outsiders access to corporate data or cause other problems. Although no major incident caused by a Java security breach has been reported, some users are taking no chances.

Earlier this year, the Australian telephone company Telstra Corp. and the U.S. Defense Intelligence Agency both confirmed that they have banned Java among their users until security questions have been answered.

Strike up the ban

Where Java is banned:

- The Boeing Co. (still uses Java internally)
- U.S. Defense Intelligence Agency
- Telstra Corp.

Where Java is welcome:

- 3M
- U.S. Defense Information Systems Agency
- U.S. Department of Veterans Affairs, Austin Automation Center

But Boeing is still using Java for development inside the company, where there is no danger of security breaches.

And other security-conscious organizations, such as the Department of Veterans Affairs and the Defense Information Systems Agency, have given a green light to their own Java development efforts.

"Our researchers said they didn't think we had a problem," said Craig Moore, security officer at the Department of Veterans Affairs, Austin Automation Center in Austin, Texas. Java applets that pose a security risk "don't appear to be very insidious or prevalent," he added.

Still, other organizations, ranging from biotechnology labs to auditing firms, are configuring their corporate firewalls to block Java applets.

A firewall is a gateway that connects an internal network to the Internet. It can be set up to select which kinds of messages can pass through.

Using a firewall is an alternative to publicly declaring a ban on the use of Java, said Ed Maillet, a network manager at Idexx Laboratories, Inc., a biotech company in Westbrook, Maine.

"The firewall system we're using blocks Java at the firewall, and we don't allow users to get around it using a modem. That kind of action is grounds for dismissal," Maillet said.

A firewall also allows Java to continue to be used in World Wide Web pages within the organization and allows the Java-blocking to be centrally administered.

Meanwhile, Sun Microsystems' JavaSoft division is fixing security holes as quickly as they appear and is also working on more comprehensive ways of improving Java security.

"We want to get beyond our current penetrate-and-patch approach," said Marianne Mueller, a JavaSoft security engineer.

The firm is working with outside security firms to tighten security further, she said.

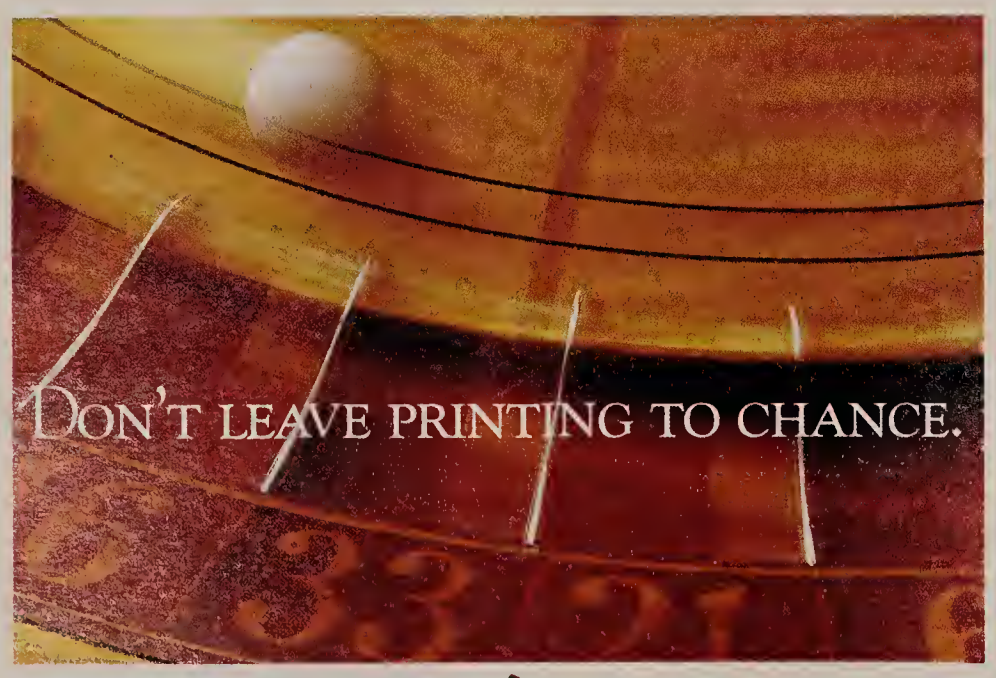
Briefs

Netscape unplugs Shockwave

Netscape Communications Corp. today announced it is doing away with Macromedia, Inc.'s Shockwave application as a plug-in. Instead, Netscape officials said the company will embed the popular multimedia device into future releases of the Netscape Navigator World Wide Web browser. Shockwave is used to view multimedia applications on Web pages. Netscape also agreed to embed Macromedia's Fireworks device, a Java language-based animation application programming interface, into Navigator.

Infoseek to launch indexing product

Infoseek Corp., which runs a search service on the Internet, has launched a new version of its search engine for beta-testing. Infoseek Ultra is available online at ultra.infoseek.com. Like competitor AltaVista from Digital Equipment Corp., the Infoseek product indexes every word on tens of millions of individual uniform resource locators (URL). But unlike the competitors, Infoseek Ultra weeds out duplicate entries and narrows 80 million URLs to 15 million unique pages. Infoseek said it plans to update its index often; AltaVista updates often run weeks or months behind.



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OS/2 for Navigator

CONTINUED FROM PAGE 67

Spidell Publishing, Inc. in Anaheim, Calif.

"I got tired of trying to work with one hand behind my back," said Clardy, who manages Spidell's internal network and external Web site.

He started to migrate to Microsoft Corp.'s Windows NT early this year.

"It was becoming more trouble to use OS/2 than switch," he said.

OS/2 is the forgotten operating system when it comes to commercial Web servers and browsers.

Until now, WebExplorer was the only major commercial browser for the platform.

"I got tired of trying to work with one hand behind my back."

— William Clardy, Spidell Publishing

On the server side, there are several freeware Web servers, including one from IBM. But none of the primary server vendors, such as Microsoft, Netscape or O'Reilly & Associates, Inc., makes an OS/2 product.

But an OS/2 port of Netscape's FastTrack low-end Web server is under discussion, said Bob Lisbonne, vice president of client product marketing at Netscape in Mountain View, Calif.

When Navigator for OS/2 ships in November, WebExplorer is effectively dead, confirmed Wally Casey, vice president of client products at IBM in Austin, Texas.

Some OS/2 users said they suffered with WebExplorer, whose interface wasn't as easy as Navigator's and which often downloaded Web pages slowly.

For example, WebExplorer doesn't let users click on hypertext links until a page is fully downloaded.

The first OS/2 release will be Navigator 2.02, which will be in beta testing this month.

Navigator 3.0 will be skipped, in favor of Navigator 4.0, which is due by year's end.

Competition from Microsoft's Internet Explorer browser helped push Netscape to support OS/2, said Joe Kern, senior customer support engineer at Philips Electronics Instruments, Inc. in Austin, Texas.

With Explorer matching Navigator's technical features, Netscape must emphasize its multiplatform support, Kern said. "I think Netscape realizes that Microsoft is after their hides."

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They promised to link their software with the 'net, and now . . .

Transaction monitor vendors start to deliver

By Craig Stedman

Transaction monitor vendors are starting to deliver on promises to link their software with the Internet. And several interested users said they like what they see so far.

The transaction processing software holds the potential for orchestrating 'net-based applications that would be both scalable and secure. Transaction monitors sit in the middle of three-tier applications, routing requests from clients to servers and handling a variety of other functions (see chart).

Scalability

That sort of middleman role looks to be just what the doctor ordered for the World Wide Web, according to several users.

"The anorexic client model of computing looks essentially like the mainframe environment with a terminal and a host server. I don't think that's going to be scalable enough for our applications," said Mike Child, director of information technology planning at BellSouth Advertising and Publishing Co. in Atlanta.

Transaction monitors are especially useful in applications that require clients to access multiple databases on different servers, Child said.

The company, which publishes BellSouth's phone directories, is considering using NCR Corp.'s Internet-enabled Top End software so internal decision-support users can get at its data warehouse via Web browsers, he added.

Corporate Express, Inc., an office and computer supplies distributor in Broomfield, Colo., hopes this year to start implementing a Web-based order-entry system built around BEA Systems, Inc.'s Tuxedo transaction monitor.

With the transaction software in place, "you can start up more and more processes at one time" without fear of overloading your system, said Chuck Nelson, a member of the technical architecture team at Corporate Express.

Tuxedo's encryption and user authentication capabilities also help reduce security concerns about the Internet, he added.

Corporate Express lets its customers place orders via dial-up links from PCs or IBM 3270 terminals. The Web browser approach will enable customers to use their client platform of choice, Nelson said.

Meanwhile, Corporate Express can reuse its existing back-end Tuxedo business logic and provide access to the transaction software via client-level Java applets, he added.

Traffic cop on duty

Transaction monitoring software performs these services:

- Routes transaction requests and responses between clients and servers
- Balances workloads among multiple servers
- Supports two-phase commit to ensure that transactions are completed
- Handles user authentication and authorization across distributed networks
- Supports global administration and distributed applications management

BEA, which took over development of Tuxedo from Novell, Inc. earlier this year, introduced its Java-based BEA Jolt software in August.

An initial release supporting basic transaction processing from a Web browser is due to ship in November; versions that take advantage of more Tuxedo services and support Java-based server applications will follow in the first half of 1997, BEA officials said.

The Jolt product followed the release earlier this summer of NCR's Top End for the Internet, which supports Java and Common Gateway Interface clients.

IBM also is getting into the act with gateway software that lets Web browsers access 3270-based CICS transaction applications. Groupe Bull's UniKix unit is doing the same thing for its CICS-compatible software.

For some users, however, processing transactions over the Web still requires a leap of faith.

Burlington Coat Factory Warehouse Corp., a retailer in Burlington, N.J., is a big Tuxedo user and has potential future interest in using BEA Jolt to do business on the Internet.

"But there's a little bit of thinking that the market isn't quite ready for that yet," said Michael Prince, director of information systems.

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Block to launch new Web site

CONTINUED FROM PAGE 67

in online banking," said Carol Cone, vice president of operations at Mascoma Bank, which has headquarters in Lebanon, N.H.

The system runs on four Microsoft Corp. Windows NT servers and Netscape Communications Corp.'s Web server software in Block's Kansas City headquarters.

The firm is moving toward Microsoft's Internet Information Server to reduce the number of vendors on which it must rely. "You have the benefit of only having to deal with one vendor to work through any problems you might have," according to Jake Geller, chief technology officer at Block.

The system runs using custom middleware that Block wrote using an object request broker to connect with standard banking back-office systems. Block now connects to back-office software from Jack Henry & Associates, Inc., which serves 1,250 banks nationwide.

For bill payment, Block subscribes to Checkfree Corp., an electronic bill-payment service. The connection between Block and the banks is over private leased lines for reliability and security.

New Products

Site Technologies, Inc. has introduced SiteSweeper 1.0, a World Wide Web site manager.

According to the Durham, N.C., company, SiteSweeper 1.0 detects broken links and identifies incorrect image references.

It goes to Web sites, gathers complete information on all files and reports back file types and sizes and the last modification dates.

Pricing starts at $299.

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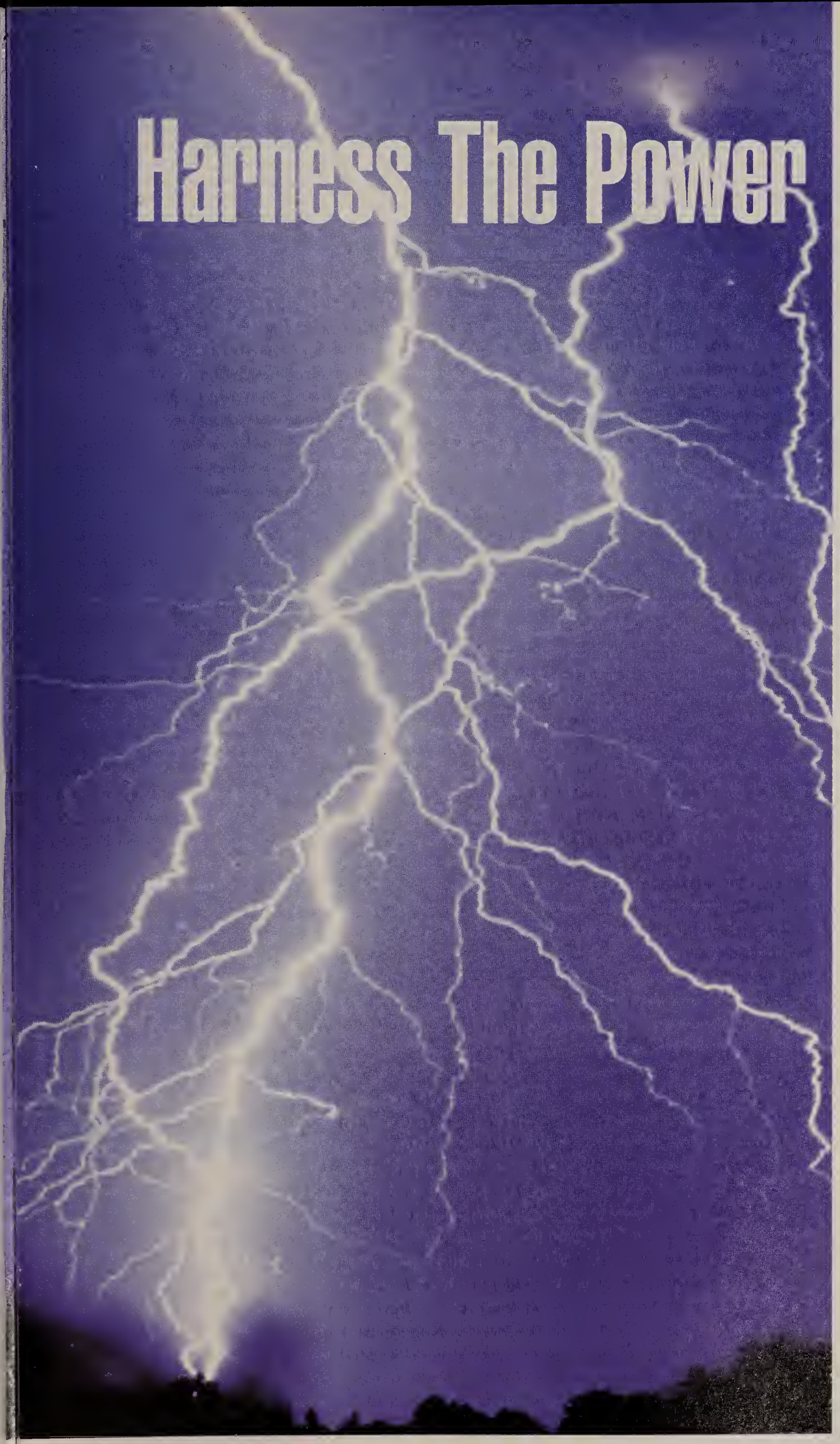
www.sitetech.com

Baranof Software, Inc. has introduced MailCheck: Intranet Edition, an electronic-mail management software suite.

According to the Watertown, Mass., company, the product was designed for corporate intranets. It gives users monitoring, service-level reporting and management capabilities. The product gives users information about all servers and remotes.

Pricing for MailCheck: Intranet Edition starts at $695.

▶ *Baranof Software*
(617) 926-6626
www.baranof.com



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New Products

Trancell Systems, Inc. has introduced WebRamp IPX Gateway, an Internet access product for Novell, Inc. NetWare users.

According to the Santa Clara, Calif., company, WebRamp IPX Gateway is a network drop-in device that eliminates the need to reconfigure existing NetWare networks for Internet access. It integrates all the functions of a LAN hub, IP/IPX gateway and IP router in a single device.

WebRamp IPX Gateway includes software for streamlining all workstation and Integrated Services Digital Network (ISDN) connections and configuration and administrative tasks.

WebRamp IPX Gateway supports up to 20 simultaneous NetWare users and includes eight 10Base-T connections, an IP router, the IPX gateway and an ISDN Basic Rate Interface.

Pricing starts at $1,495.

▶ *Trancell Systems*
(408) 988-5353
www.trancell.com

Ulysses Telemedia Networks, Inc. has announced Odyssey Suite, an independent World Wide Web-based groupware product for intranets.

According to the Minneapolis company, the suite combines a contact manager with calendar and reminder applications.

Odyssey Suite gives mobile users wide access to their applications from the road, through PCs, Macintoshes or Unix machines.

It integrates with corporate intranets and with the Internet and can handle an unlimited number of users.

Pricing starts at $1,500 for the server software and $150 per user.

▶ *Ulysses Telemedia Networks*
(612) 359-0870
www.ulysses.net

NetSpeak Corp. has announced WebPhone 2.0.

According to the Boca Raton, Fla., company, WebPhone 2.0 gives users a real-time, business-quality, full-duplex voice communications system with point-to-point connectivity over the Internet.

It has off-line voice mail and conference-call features, call transfer and password protection.

It also has a noteboard for interactive party-specific text chat and a World Wide Web browser help application to assist users when they place calls.

Pricing for WebPhone 2.0 starts at $50.

▶ *NetSpeak*
(407) 997-4001
www.netspeak.com

Dagar Software Corp. has introduced Disconnect, a Windows-based utility for Internet users.

According to the Bethany, Conn., company, Disconnect automatically terminates idle online and Internet connections after time intervals set by the user.

It prompts the user with two visual and audio warnings, then severs the connections. It has separate settings for all major online services and lets users set different time limits for each.

Disconnect works with Microsoft Corp.'s Windows 3.1 and Windows 95. It costs $30.

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Solutions Marketing Manager
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For more information, please contact Carolyn Medeiros, Publishing Services Director, Boston 1-800-343-6474

Brief

Directory assistance

CCOM Information Systems has opened up corporate directories to users of World Wide Web browsers. The Iselin, N.J., company recently added two tools — Intranet Directory Publisher and PhoneLine for the Intranet — to its existing Master-Directory offering. Together, the software lets administrators collect data from telephone, LAN, electronic-mail and database directories and then publish the information to the corporate intranet. Users can access the data from a Web browser, based on defined filtering requirements. The suite costs $9,995 for a 500-user license.

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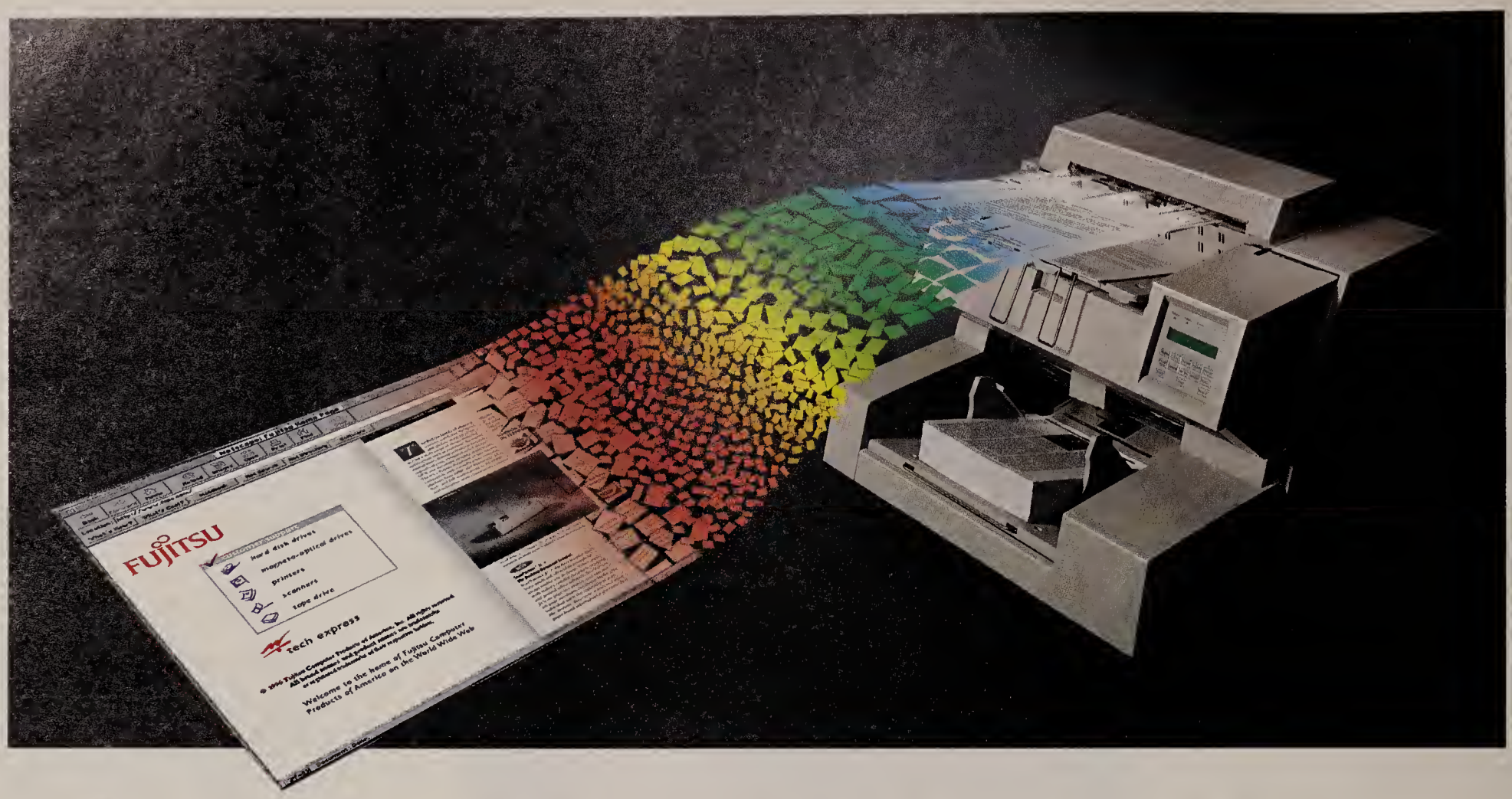

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Hong Kong Jockey Club bets on monitoring software, **76**

Corporate Strategies

Health Insurance Plan's JoAnne Olson: *'We spent so much time going through paper it wasn't funny. It still isn't funny.'*

HMO cures service, claims processing ills

By Thomas Hoffman

Until recently, Health Insurance Plan of Greater New York (HIP) resolved only 10% of its 2,000 daily customer service calls on the first try.

The firm's membership services unit was severely understaffed, and customer service representatives were stuck with an inflexible character-based call center system that made it nearly impossible to provide fast and accurate telephone support to HIP's 1.1 million members.

It gets worse. HIP's claims department was also floundering. Even though the group stored more than 90% of its 3 million annual claims electronically, it didn't have an inventory system to locate the other 200,000 paper-based claims.

So if a provider complained about not being paid, it was easier for the nonprofit health maintenance organization (HMO) to produce another claim than to find the original. As a result, multiple claims were being processed, and the same claims were often paid twice. That cost HIP more than $2 million annually in duplicate claims.

"We weren't managing the information well, and we weren't helping our members," acknowledged JoAnne Olson, assistant director of member relations at HIP.

To fix its problems, HIP went on the attack with a series of technical and pro-

HMO, *page 76*

Briefs

ISO 9000 aid unveiled

MK Group, an independent business division of **Computer Associates International, Inc.**, introduced several products at CA-World '96 in New Orleans last month. MK is a computer-aided quality assurance module aimed at helping midsize manufacturers achieve ISO 9000 certification. An advanced warehouse management module was also added to MK.

CSC to process claims

Computer Sciences Corp. (CSC) won an outsourcing contract to process managed Medicaid claims for **Gateway Health Plan** in Pittsburgh. Under terms of the agreement, CSC will provide information services, data warehousing, decision- support systems and other services to Gateway from its Albany, N.Y., data center. Terms and the length of the agreement weren't disclosed.

Smooth move

Users generally pleased with CA/Legent merger

By Thomas Hoffman

What a difference a year makes.

When Computer Associates International, Inc. acquired rival Legent Corp. last August, information systems managers from coast to coast expressed healthy doses of fear and concern about the new owner.

The fear was that CA would jack up prices on Legent software, given its already commanding share of the mainframe systems management market. The concern was that CA would stop enhancing Legent products and milk the customer base for maintenance revenue.

IS managers also worried that Legent product support would drop once CA took over. But so far, most IS managers are giving CA a thumbs-up for the way it has handled the $1.8 billion deal.

Most IS managers seem pleased, if not surprised, by CA's support of Legent products.

One IS executive who has weathered "some stormy times" with CA has seen his situation clear since the Legent acquisition. Wade Brown, executive vice president and chief information officer at Washington National Insurance Co., said the Lincolnshire, Ill., company came within a week of ditching its CA-1 tape management system for Legent's Epic tool set last summer. The problems stemmed from "several sticky contractual issues," about which Brown declined to elaborate.

But during the Legent transition, Washington National was able to resolve its contractual differences with CA and elected to stick with CA-1. Brown, who credits CA President Sanjay Kumar with patching up relations with his company, calls the CA/Legent deal "one of the smoothest transitions I've ever come across."

Like most mergers and acquisitions, where customers are assigned new service representatives, it took a few months for CA's support of Legent products to fire on all cylinders. IS managers such as Gerald Verchick at Nevada Power Co. complained early on that CA's support of Legent products such as System Output Archival and Retrieval had trailed off.

Since then, CA's product support has rallied, although there is still room for improvement, said Verchick, MIS facilities manager at the Las Vegas-based utility. Legent "took a more proactive view of users," he added, noting how his former vendor "would ask questions like, 'Do you need a PC version of this tool?' We're still not getting that from CA."

The merger "has been one of the smoothest transitions I've ever come across."

— Wade Brown
Washington National Insurance

A handful of CA-Endevor customers expressed concern at the CA-World '96 user conference last month that CA was pumping too many resources into its thriving CA-Unicenter systems management suite while skimping on enhancements to the change management tool.

"I'd like to hear more about [enhancements to] Endevor and fewer sales pitches about Unicenter," said Joseph A. Mallon, manager of change management at United Technologies Sikorsky Aircraft in Stratford, Conn.

CA is working on enhancements to CA-Endevor, including plans to ship a Unix version of the change management package by early next year, said Yogesh Gupta, senior vice president of product strategy at CA.

Jockey Club bets on monitoring software

By Veronika Trinkle
HONG KONG

The Royal Hong Kong Jockey Club is keeping a tight rein on its soon-to-be-launched, redeveloped betting system by using system monitoring and management software from BMC Software, Inc. in Houston

The Jockey Club opted in June to use Patrol, an off-the-shelf application management software package. It will be fully implemented sometime later this year, said John Markwell, director of information technology at the Jockey Club.

"We are putting in an open distributed environment and system management facility, and such things are quite complex. So we need the Patrol software to basically help us manage the distributed network," Markwell said.

The Jockey Club is overhauling its transaction environment, bridging legacy systems with a high-availability client/server system. The rollout began in February and is scheduled for completion in October.

Tight management

Patrol was designed to monitor and manage most of the databases and operating systems on the market, including Windows NT, OS/2 and several versions of Unix.

"Even more important for the Jockey Club, it can monitor unique business applications that have been developed in-house," said Alex Wu, BMC's regional manager for Greater China.

The Jockey Club operates a three-tier client/server environment with high-end Digital Equipment Corp. 8400 servers for the heavy-duty transaction processing workload, Wu said. "These are networked to midrange Digital 2100 and IBM RS/6000 servers to provide distributed processing of the large numbers of Intel Corp.-based systems in the betting outlets and offices around the territory," he added.

Patrol will initially manage the betting

DAVID MARSHALL

system, which is a major part of the Jockey Club's IT system, Markwell said. The IT department may extend Patrol's monitoring activities to other aspects of the network.

"We're spending a lot of effort on getting up to speed on how [Patrol] works," Markwell said. "We will not actually roll out Patrol everywhere in a huge deployment until we have a better grip on it and have considered the cost structure. At the end of the day, it has to be cost-effective."

Trinkle writes for *Computerworld Hong Kong*.

For the enterprise, Web-based clients still have their limits

By Kristi Essick
SAN FRANCISCO

Transactional processing

Will the World Wide Web browser become the strategic, one-size-fits-all client for the enterprise?

Considering the speed with which companies such as Oracle Corp., SAP AG, Baan Co., Dun & Bradstreet Software and PeopleSoft, Inc. are racing to "Web-ify" the client side of their high-end client/server applications, it appears vendors think so.

But although the intranet may become the network of choice for many large companies in the next few years, most analysts and users said large-scale client/server applications for transactional processing will always have a place in a company's network.

Some of the benefits of a Web-based client include reduced costs, less complexity for network administrators and employees who use the product, and standardization of proprietary architectures into Internet standards. Almost all of the client/server applications companies have a strategy to put a Web browser front end on their products, but it may be a while before users can expect full transactional functionality from a browser client, analysts said.

"Web interfaces can't possibly give access to all the functionality you can get now with transactional tools," said Dave Folger, an analyst at Meta Group, Inc. in Stamford, Conn.

A manager responsible for maintaining an SAP R/3 business applications system acknowledged he would be enthusiastic about using a Web browser client for several of the product's services.

"We are definitely planning on implementing a Web-based client by next year for some of the applications, such as the sales functions," said Kevin Moore, IS manager at Cataphote, Inc., a plastics maker in Jackson, Miss.

Still, most users agreed it will take several years before they trust confidential information to an intranet-based application.

"The intranet is no threat to the applications we use from Oracle right now, such as their large financial application" said Peter Ho, senior network specialist at Unocal Corp. Unocal has a wide-area network that connects sites in North America, Europe and Asia and uses an intranet mostly for human resources functions.

"Oracle and SAP are adapting to the changing tide of the Internet by slapping a Web front end on their products, but we still want the trusted engine in the back and not Web-based applications," Ho said.

Essick writes for the IDG News Service.

HMO

CONTINUED FROM PAGE 75

cess changes over the past three years. Earlier this summer, HIP made some modest cuts to member premium rates, helping it remain one of the least expensive HMOs in New York.

HIP dramatically improved its call center operations and claims processing activities by installing front-end graphical user interface (GUI) systems and an imaging system. Today, 95% of all member calls are answered immediately.

Fixing up PC-to-mainframe interfaces with customer service in mind may seem like a no-brainer approach to the problem, but HIP isn't the only health care organization grappling with the issue.

While HMOs have helped spearhead the shift by vertical industries to focus on customer service, the health care industry lags behind catalog retailers and insurance companies when it comes to equipping representatives with GUIs and access to legacy customer information, said Jane Metzger, director of emerging practices at First Consulting Group, a health care management and IS consultancy in Waltham, Mass.

To get started on its makeover, HIP looked over its mainframe-based member services system, which didn't even log member calls online. If customer Mary Jones called three or four times to resolve a claim, HIP customer representatives would have no record of her previous calls. They had to "shout across the room to other reps to see who spoke to Mrs. Jones that morning," Olson said.

To track those calls online and put membership data within reach, HIP built a front-end system using Easel Corp.'s GUI tools. As part of the $3 million project, started in 1993, HIP also installed Wall Data, Inc.'s Rumba gateway software to connect customer reps to as many as eight mainframe-based membership history applications. Member information stored on a Sybase, Inc. relational database management system is accessed through a Compaq Computer Corp. Proliant server.

To supplement the technology upgrades, HIP also doubled the number of trunk lines to its customer reps and quadrupled its member services staff.

Claims gains

Once its membership services operations were on track, HIP began chasing its biggest paper tiger: claims.

In January 1995, HIP began using a claims document tracking module from the Sybase RDBMS that stores member information. The module was linked to a Minolta Corp. MI3MS 3000 imaging system through a 175-seat LAN to store and track manual claims.

Since the $800,000 Minolta imaging system went live in January 1995, HIP has saved $2 million by virtually eliminating duplicate claims, Olson said.

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Client/server helps insurer crank out reports

By Julia King

It used to take accountants at Allmerica Financial Corp. 16 business days to close the books at the end of each month.

On the 17th day, top managers at the $17 billion company got their internal reports, and staffers in the corporate finance department got cracking on the next month's numbers. Like most other reports, these were generated by a mainframe-based system, which was updated once each night and could be accessed only by a programmer or business analyst.

Then, in 1994, it was decided that the mutual insurance company would be converted to a stockholder-owned company. That would mean additional regulatory reporting requirements. It would also entail furnishing information on a timely basis to financial analysts and others outside of the Worcester, Mass., financial services firm.

"We had more pressure to produce reports in a more timely fashion [because] we had a more visible audience," said Lucy Van Laarhoven, vice president of accounting and general ledger control.

In short, it would mean installing a new financial information system.

> *"If we were taking 23 or 24 days to get our information out and other companies were taking less, we were going to be viewed as not having our act together."*
>
> **— Rick Leif**
> **Allmerica Financial**

"Good or bad, the analysts want to know what's going on. They want to make recommendations on our stock and performance," said Rick Leif, vice president of information systems.

"If we were taking 23 or 24 days to get our information out and other companies were taking less, we were going to be viewed as not having our act together," he explained.

Solution at hand

So last year, Allmerica launched a major reengineering initiative, which included implementing PeopleSoft, Inc.'s client/server financial applications.

Ease of use was a key reason for choosing the software. But it wasn't the only one. Before buying, Allmerica wanted proof that the system could handle its transaction volumes. Subsequent in-house tests showed that 100,000 post and 100,000 edit transactions took 30 minutes each — adequate to handle Allmerica's requirements.

Allmerica implemented the client/server system on Sun Microsystems, Inc. Unix machines running an Oracle Corp. relational database. The system went live this past Jan. 1.

Today, thanks to business process changes — such as speeding up the allocation of companywide expenses — and a distributed computing environment that lets business managers access and update information on an ad hoc basis, Allmerica's managers receive accurate monthly reports seven business days sooner than before.

And fewer people in corporate finance are dedicated to generating reports. Instead, workers in the business units do much of the work themselves, using reporting tools built in to the PeopleSoft applications.

"Before, if someone wanted a complex report, they could wait months for it to be written and tested," Van Laarhoven said. "In this environment, they can get data faster themselves and look at it the way that they want to look at it."

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"We had a big order. And only SAP could fill it."

—Susan Clemmons
Director of Business Solutions,
Burger King Corporation

"When we went looking for a Human Resources application at Burger King, we were looking for a lot.

"We needed best-of-breed functionality. But we also needed integration throughout our entire system.

"Since the fast-service food business is always changing, we had to have as much system flexibility as possible.

"And any solution would have to not only work for our individual company sites, but also on an enterprise level across 56 countries and international territories.

"We considered all of the options available, but ultimately, there was no contest. SAP's Human Resources Management module was the only solution that could do it all.

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"Our ability to handle global HR projects has increased dramatically, too. We reduced the time it takes to overhaul our medical plans by 75%. And we developed our own real estate management system using SAP's programming tools, giving us the best tracking of global site data we've ever had.

"In fact, SAP's HR application is so good, I can't think of anything that would make it better.

"Except, maybe, a side of fries."

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Web Watch
Check out some practical Web-surfing sites for IS managers. See page 84.

The imagery of a bookshelf made a strong impact on Bart Westberg when he took Sprint's leadership training program

STEVEN CURTIS

LEARNING *to* LEAD

What makes a leader? Some students in IS training programs focus on learning about themselves, not dishing out orders/ By Jeremy Schlosberg

Bart Westberg got the point as if it smacked him on the head with a textbook.

Westberg, director of enterprise systems at Sprint Corp. in Kansas City, Mo., took part in Sprint's weeklong Leadership Institute. An instructor asked, "If you were to view the beginning and the end of your life as bookends, what are the titles of the books on that shelf?"

Westberg's abashed realization: "I just had two books on my shelf." There was a "big, fat volume" that said "Sprint" and another that said "family." (He and his wife had a 4-year-old, a 2-year-old and an infant at the time). Sitting in a classroom, talking about balancing your life and achieving personal development is a powerful experience.

The lesson is one of many being nudged home in leadership training seminars for information systems managers. The bookshelf lesson, Westberg says, shows that "if you focus too much on just one or two things, you are absolutely going to burn yourself out. You are not going to be successful."

Learning to lead, *page 82*

Learning to lead

CONTINUED FROM PAGE 81

Philosophers have long debated whether leaders are born or made. But some IS executives are voting for the "can be made" ticket by sending up-and-coming managers to leadership programs.

IS isn't alone. Last year, 72% of U.S. companies with at least 100 employees sent managers to leadership training, *Forbes* magazine reported in April. According to *Forbes*, management and leadership training is resurging since the recession in the early '90s slashed corporate training budgets.

In particular, the Society for Information Management's (SIM) Regional Learning Forums have gained a following. Since they were launched in 1992, the forums have graduated more than 160 people. Another 76 graduates are expected later this month at SIM's annual conference in San Francisco.

SELF-DISCOVERY

SIM doesn't focus on molding a corps of Eisenhowers and Pattons but on allowing students to discover themselves and what they need to lead.

Program graduates talk about how they were energized and recommend the forums to others. "Everyone who comes out of it feels like they've grown tremendously," says Mary Anne Luczak, first vice president of First Chicago NBD in Chicago, of her SIM experience. "Yes, it's hard to quantify. But it does work."

If you want to train IS managers in leadership skills, what can you learn or copy from these programs?

First and foremost, IS leadership programs concentrate on so-called "soft" issues — how people relate to others. This is true of any leadership training but is of special importance for IS professionals.

"The human element introduces a randomness that's difficult for people with technical backgrounds to get a grasp on," says Luke Novelli, who teaches a course on project leadership at the Center for Creative Leadership (CCL) in Greensboro, N.C.

It can also help in working with fellow executives. Just ask Kathryn Collins, vice president and chief information officer at Community Kimball Healthcare System in Toms River, N.J.

Collins attended a College of Healthcare Information Management Executives (CHIME) seminar in 1994. She had leadership skills then, but the "comprehensive and intense" course helped her articulate an information technology vision for her company, which includes two acute-care hospitals with 950 beds and a 100-bed psychiatric facility.

Without the course, she says, she wouldn't have been promoted to her current job.

COMING TO 'AHA'

SIM students, split among four geographic regions, attend six two-day sessions each year starting in January. The forums take a heuristic approach, or learning through discovery, says Bart Bolton, a forum facilitator in Upton, Mass. The discussions, role-playing games and other parts of the forums help students reach their "Aha!" moments, when they discover something about themselves.

When the forum begins, Bolton says, "You never know what you've got sitting there, and it's interesting to see it evolve."

The CCL course is four days and concentrates on often-subtle interpersonal communication issues such as body language, eye contact and how to approach others nonconfrontationally. "We use a realistic presentation," Novelli says, namely, a computer-based behavioral simulation that engages participants in a hypothetical project and allows a detailed analysis of each student's "performance."

A favorite Bolton technique is a "negotiation game." Six participants split into two teams, playing by a set of rules that can be changed as the game progresses. After the bargaining begins, Bolton sometimes swaps a member from each team and sees whether he or she will volunteer secrets from the old team or if the new teammates can coax secrets out of them. The lesson: It can show some of the students' "true colors" and prod some of them into deeper conversations.

CCL's course, as does SIM's, also teaches technical managers to understand themselves. Introspection, in a way, is the program's underlying theme — the idea that "this is first and foremost about you — who you are, what you aspire to be," says Mike Carleton, director of the office of information technology at the U.S. Department of Health and Human Services in Washington. "Then you translate that self-knowledge into your own management style."

These programs also expose students to new ideas and insights. SIM attendees must read an eclectic reading list of more than 40 books, which are discussed by the same group of 16 to 24 participants at each meeting. (The titles include the John Steinbeck novel *The Pearl*, and Steven R. Covey's *Principle Centered Leadership*). The meetings also include candid talks by IS executives and others about life in IS management.

BRINGING THEM TOGETHER

Diversity is another characteristic of these programs. When they don't bring together people from different companies, they gather managers from different backgrounds.

Catherine Lewis, manager of global portfolio planning at Xerox Corp., has overseen the development of her company's leadership training program for technology managers, which is based closely on SIM's. She works to ensure that people of different ages, races, genders, backgrounds, organizational levels and nationalities attend.

In IS, she says, "we tend to hang around people who are a lot like us." But managers intent on improving their leadership skills are going to learn far more about mobilizing teams by interacting with a diverse, rather than a homogeneous, group.

Disrupting normal work patterns to learn can change how people think. Entering the SIM program, Luczak was all but convinced that there was no room in her 90-hour work week for this sort of personal development. At the beginning, breaking away for two days every month was extremely difficult for her. In the end, those days showed her she could, in fact, "find time for education and for some balance in my life."

Understanding the importance of keeping work in perspective may end up being the greatest lesson a leadership training program can teach.

Westberg might agree. He says before he entered the leadership training program, "work was the No. 1 and only thing." Now he takes a more sensitive approach to project management.

Before, he and others worked feverishly through nights and weekends to meet deadlines. Now, there is more emphasis on how to plan better so that they won't be stuck in the office.

The week in leadership training, he says, allowed him to come away with "a completely new perspective." ■

Schlosberg is a freelance writer in Cincinnati.

DAVID MARSHALL

LEADING*the*WAY

Executive leadership training programs and courses come in three basic varieties:

- At or sponsored by independent executive education organizations (such as the nonprofit Center for Creative Leadership).
- At established universities.
- Internal corporate programs (such as General Electric Co.'s Leadership Development Center).

Within IS, the pickings also emerge from these areas but grow somewhat slimmer. The profession's most visible attempt at leadership training is the Regional Learning Forum program run by the **Society for Information Management** in Chicago. Each forum is a series of six two-day sessions spread over several months. Cost: $5,000, which includes all class materials, breakfast, lunch and a two-year SIM membership.

Other programs range from a four-day, $3,200 course at the **Center for Creative Leadership** called "Project Leadership" (known until this year as "Leadership for Technical Managers") to a specialized master's degree program introduced last year at **Northwestern University** called "The Communication Systems Program," which involves two academic years of once-a-week, full-day classes. Tuition: $18,000 a year.

CHIME (College of Healthcare Information Management Executives) offers a seminar in Ann Arbor, Mich., for IS managers. Cost: $1,995, $1,695 for members of CHIME, HIMSS (Healthcare Information and Management Systems Society) and CHIM (Center for Healthcare Information Management).

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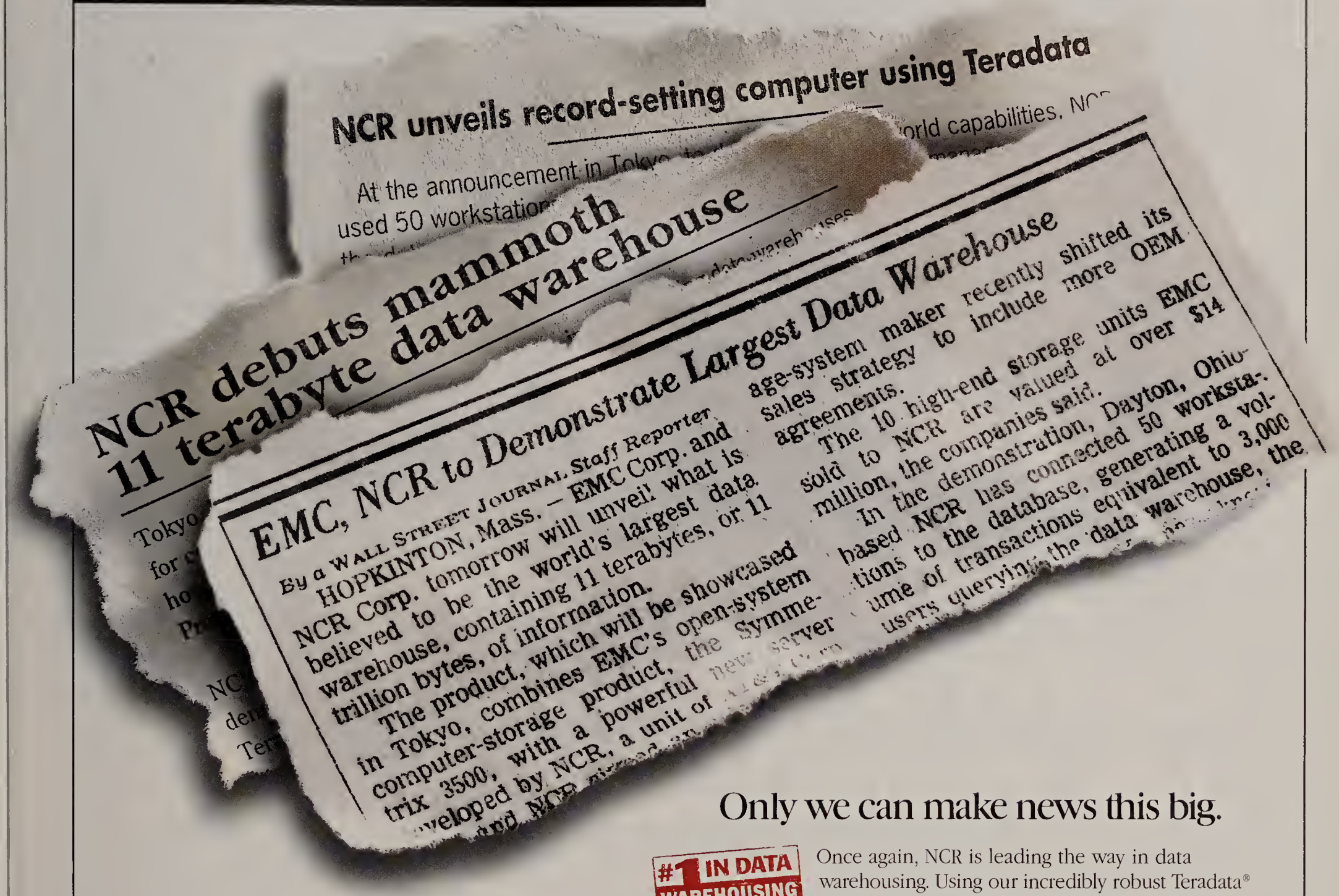

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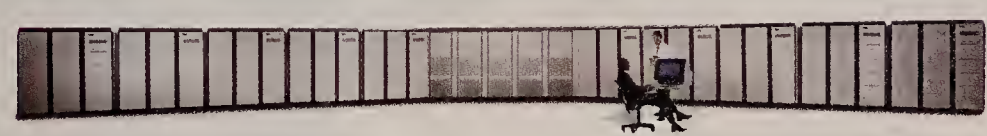

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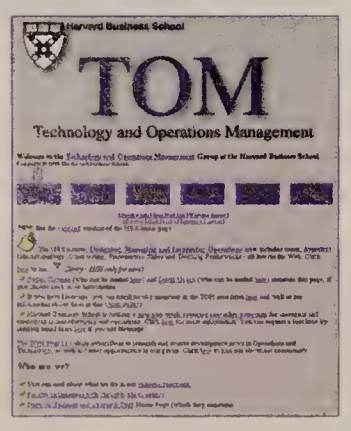
By Leslie Goff

Practical Internet Sites for IS Managers

America's Web 100
fox.NSTN.Ca:80/~at_info/

Moments when you wish they made Cliff's Notes for information systems professionals: You have two hours to prepare for a meeting to discuss Internet strategy with your company's all-twenty-something World Wide Web site development team, and you want to be informed when you show up. Use this directory of the top-grossing U.S. and global corporations that have pages on the Web to get up to speed. Each list is cross-referenced by industry and offers links to the sites, which makes it a snap to find out what your competitors are up to.

Harvard Business School Technology and Operations Management Home Page
rigel.hbs.harvard.edu/

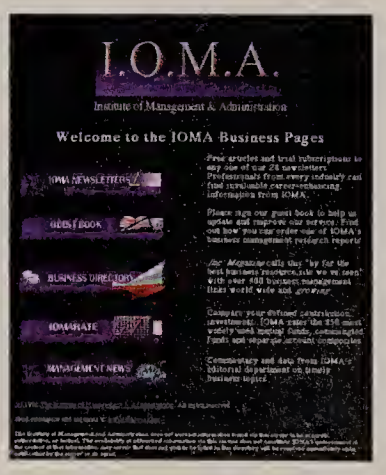


Now that school is back in session, perhaps the webmaster at this site — which focuses on the relationship between technology and manufacturing operations — will do something about the all-text design. It makes the home page a bit tedious to wade through. But if you persist, you can find enough reading material to get your intellectual juices flowing such as "The Coordination of Global Manufacturing," "A Flexible Structure for Computer-Controlled Manufacturing Systems" and "Fault Diagnosis and Computer-Integrated Manufacturing." The working papers that are available to the public (some parts of this site are available only within Harvard Business School) are a few years old but still on the leading edge, if not the cutting edge, of the issues. The online case studies are also restricted, but general surfers can peruse a sample that analyzes Digital Equipment Corp.'s Internet strategy and contains many links to other relevant sites. The best feature here, and one that should be expanded, is a virtual notebook in which surfers can leave their responses to the Digital study. After you work out your brain, check out TOM's executive education courses.

HRLive
www.jwtworks.com/hrlive/index.html/

Getting ready to hire a fresh crop of college grads? Or about to let go of some longtime employees? Get a fresh perspective on the employment landscape at this site, which is chock-full of reports, statistics and other truly useful information, such as a weekly nationwide layoff report detailed by industry; a listing of the top recruiting markets by industry and profession (for example, the top metropolitan markets for finding computer programmers are Washington, New York and Los Angeles); and a cost-per-hire survey. As the name implies, HRLive is aimed at human resources professionals but is valuable to anyone who deals with staffing issues. Is someone in your group complaining about job-related stress? Print the site's list of the top stress-inducing jobs (rest assured IS isn't among them).

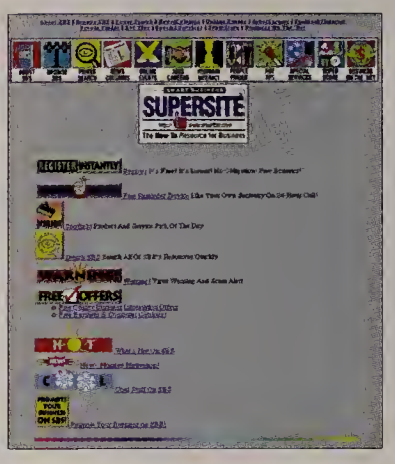
Institute of Management and Administration
www.ioma.com/ioma/



This site balances the desire to gain customers with the realization that if you are going to have a Web site, you had better be willing to provide some free content. The institute publishes business and management reports. Here, it offers samples that are updated frequently and contain thoughtful links to sources of more information. In August, for instance, a sample article "How to Develop Cost Effective Network Security Strategies" in the "Managing LAN Costs" newsletter was linked to the National Computer Security Association's home page. Other IS-related articles cover Windows NT challenges, outsourcing pros and cons of network management and the costs of Java-based networks. IS managers may also take note of a range of general business and management reports.

But unfortunately, these articles aren't indexed or categorized. You must scroll through the titles until you find one that suits your fancy. Another area with a big readability problem is the links page, which has received a lot of attention for its thoroughness. Indeed, the list of links to other business resources and commercial network enterprises is vast (two pages deep), but they are listed in paragraph form without commas or other separators. A search engine would also go a long way toward making this potentially valuable site even more useful.

Smart Business Supersite
www.smartbiz.com/



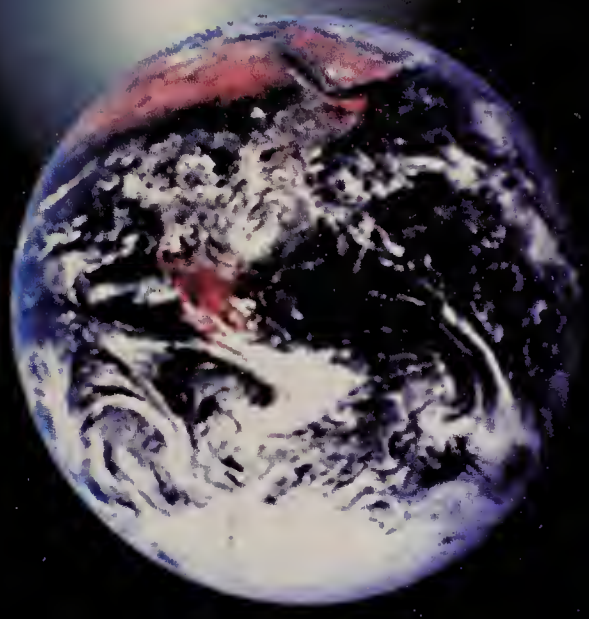
Dubbed the "how-to resource for business" site, it offers a little something for everyone. Nearly every colorful icon on the tool bar across the top of the home page leads to useful, relevant material such as columns on electronic privacy, violence in the workplace and internal marketing. You could end up spending a lot of time here reading the articles, which are gathered from a variety of sources and have hypertext links.

But if you don't have much time, click on the browse button to call up a Windows-like menu of subjects. Then choose Computing in Business to get a precise index of all relevant material at the site, from "PC-Based Sales and Marketing Management Improves Results" to "E-Mail Confessions in Court." The Jobs/Careers section includes an article any top IS executive will want to read called "What You Should Know About Executive Search Firms" as well as other articles and a message board. People Finder is a unique section that offers users a venue for locating speakers and consultants. You can even buy your administrative assistant a desk organizer using the online shopping service.

The Training Registry
www.tregistry.com/

This is a uniform resource locator that you'll refer your staff and other managers to as a consolidated resource for locating live classes and multimedia-based courseware. It won't serve all your training needs, but it makes a great jumping-off point for comparison shopping. Nearly 300 IS-related courses, in systems development and computer operations and networking, are indexed here along with more than 500 professional development courses and end-user application and Internet training. The site was created as a promotional venue for training vendors, but it serves the business professional by maintaining an informational, noncommercial tone. It offers links to vendors' home pages instead of a sales pitch.

Goff is a freelance writer in New York.



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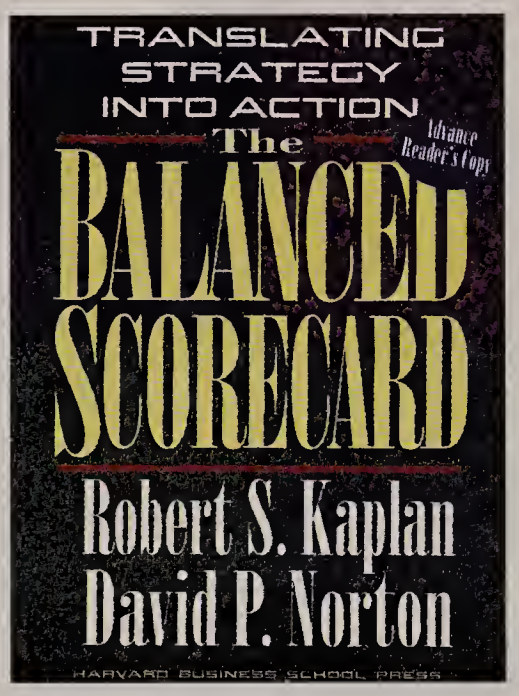
IS Manager's Bookshelf

Measure to manage

The Balanced Scorecard gives a new twist to an old axiom

The Balanced Scorecard: Translating Strategy into Action

By Robert S. Kaplan and David P. Norton; Harvard Business School Press, Boston; 336 pages, $29.95



An old axiom states, "You can't manage what you can't measure." This book would change that to read, "What you measure largely determines how you will manage."

The authors, both longtime consultants, have repackaged a lot of standard planning techniques and added a couple of new twists that give the techniques marketing appeal. The standard techniques include asking executives to reexamine their mission, strategies and objectives in a disciplined way. Long-range objectives are translated into one-year milestones. Mechanisms and resources to achieve the objectives are identified, and everyone spends a lot of time and effort measuring quarterly results of success.

These measures of success have traditionally been financial, but the authors expand the concept to include a "balanced scorecard" of measures. Scorecard refers to the set of measurements around financials, internal business processes, learning and growth and customers. Balanced refers to the weighing of measures such as internal vs. external, strategic vs. operational, quantitative vs. judgmental, past-oriented vs. future-oriented.

This concept is laid out in Chapter One. Chapter Two provides a rationale for moving from the purely financial measurements that have dominated business.

The authors argue, for example, that in the Information Age, assets such as corporate knowledge can't be properly valued. They rightly conclude that most existing measurement systems focus on lower-level employees rather than the entire organization and thus don't foster alignment. In Chapters 3-8, the authors illustrate the approach with case examples.

What's new in this concept of balanced scorecard is the emphasis on organizational feedback and "double-loop" learning. This means not only evaluating current results against the plan but also questioning the underlying assumptions and theory upon which the plan is based. This is the topic most relevant to information systems managers because much of it can apply to project management.

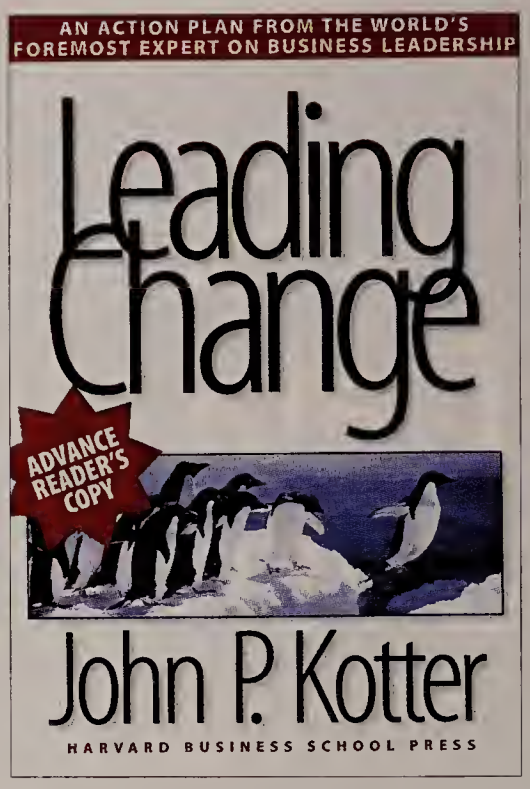
Howard Rubin and Associates, the Software Engineering Institute and others long ago developed balanced scorecard models to evaluate information technology performance. It's great to see the business world getting on the bandwagon.

Change ahead?

Leading Change offers a road map for business but few directions for IT

Leading Change

By John Kotter; Harvard Business School Press, Boston; 224 pages, $24.95



This book is an extension of the author's 1995 *Harvard Business Review* article and prior works on the difference between leadership and management.

He delivers an eight-point program for transforming businesses, each illustrated in separate chapters: 1) Establish a sense of urgency; 2) Create the guiding coalition; 3) Develop a vision and strategy; 4) Communicate the change vision; 5) Empower employees for broad-based actions; 6) Generate short-term wins; 7) Consolidate gains and produce more change; and 8) Institutionalize new approaches in the culture. This seems very pat and familiar — but perhaps there is more depth than meets the eye?

Unfortunately, we'll never know because Kotter chose to illustrate the approach with personalized anecdotes from his consulting practice rather than true case studies. What we get are largely conversations with unidentified people in unidentified companies, who (surprise!) nicely restate the author's views. The comments are certainly lively and frequently have a ring of truth to them, especially when discussing failures or frustrations. But this is a technique more appropriate for an after-dinner speech than a rigorous management text.

A greater disappointment to the information technology manager will be the fact that in all this discussion of change, technology is almost totally ignored. Certainly there must be a role for groupware and networks in communicating the vision. Workflow-based production systems should empower employees in accepting the change. Management reporting systems should help institutionalize the changes, but we'd never know it.

Granted, this gives the book a certain timeless quality that could make it relevant in any number of prior ages. The question is whether it is relevant for the Information Age.

Book reviews are by Leilani Allen, a director at Tenex Consulting in Burlington, Mass. She can be reached at tenex@tenex.com.

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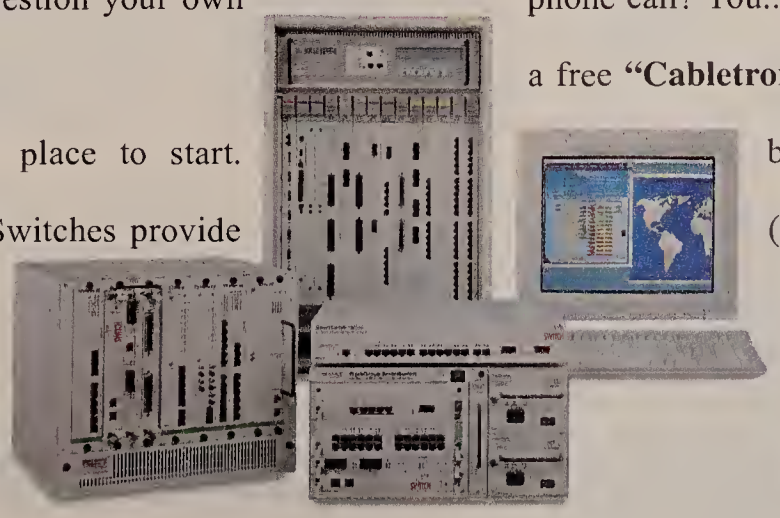

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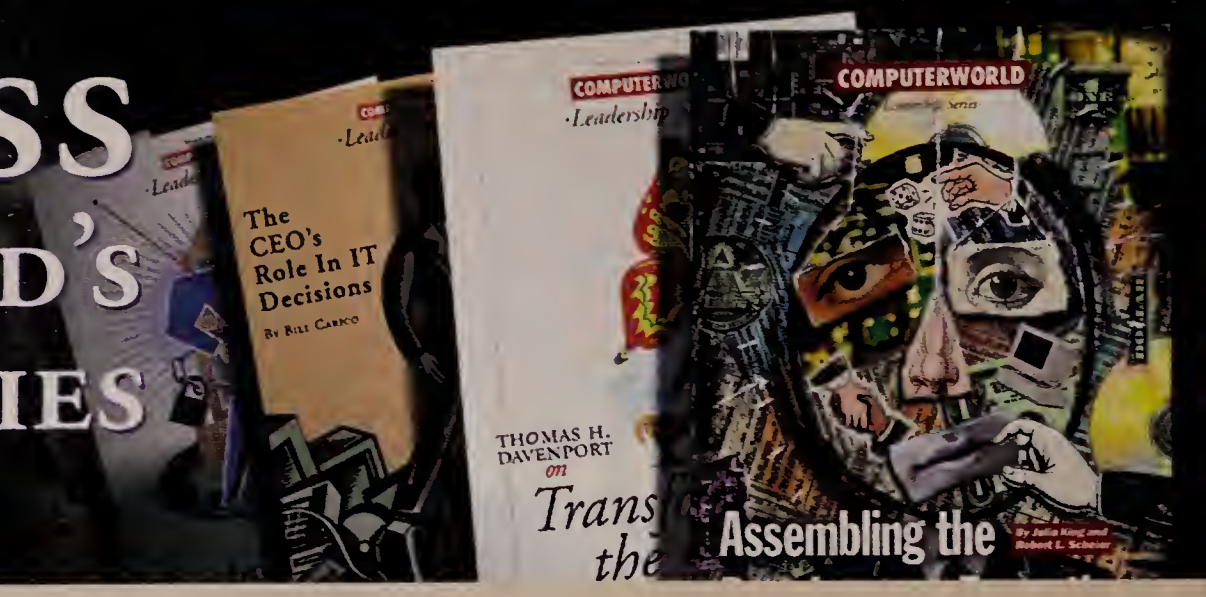

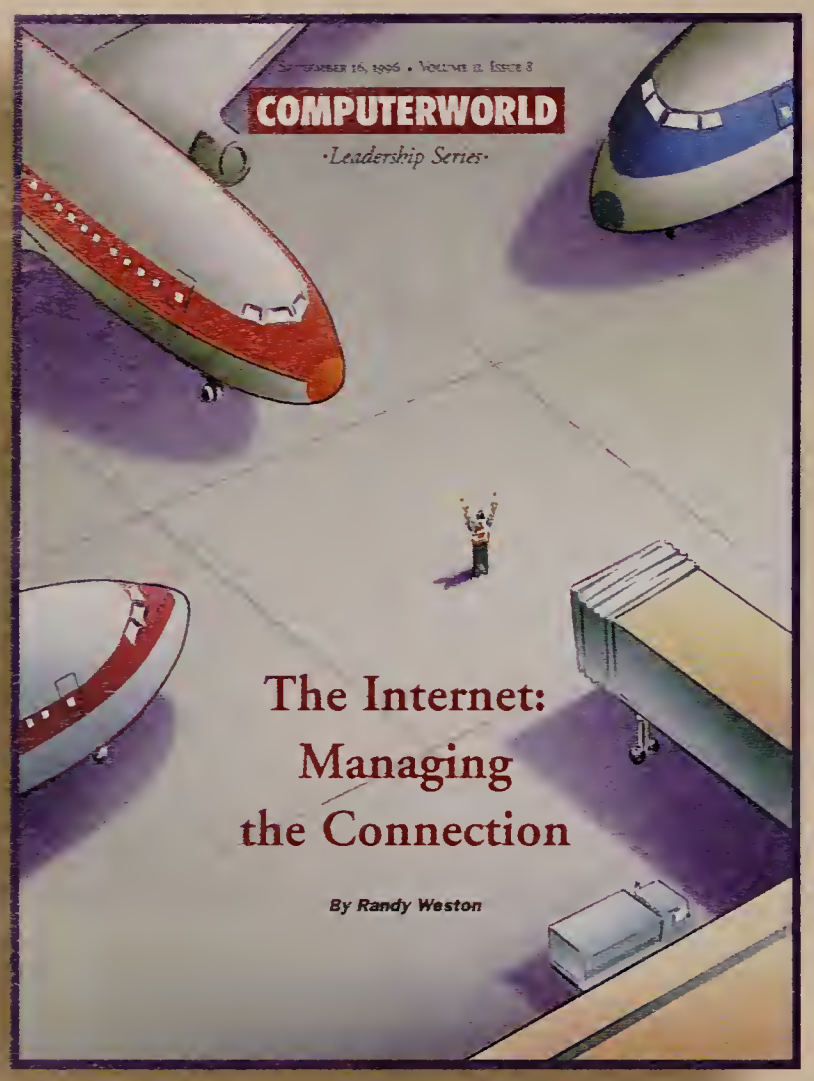

Coming in the September 16th issue of Computerworld...

The Internet: Managing the Connection

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The Role of the CEO in IT Decisions by Bill Carico
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Into the Infocosm by Glover Ferguson
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The Enterprise Engineer by James Martin
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Rebuilding the IS Organization by Robert A. Zawacki
The Recentralization of IT by Ernest M. von Simson
The New CIO/CEO Partnership by Harry M. Lasker and David P. Norton
Evaluating the CIO by Thomas J. Buckholtz
Staffing for the Future: A Leadership Roundtable by Bruce Rayner
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- 60. Government - State/Federal/Local
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- 70. Mining/Construction/Petroleum/ Refining/Agriculture
- 80. Manufacturer of Computers, Computer-Related Systems or Peripherals
- 85. Systems Integrators, VARs, Computer Service Bureaus, Software Planning & Consulting Services
- 90. Computer/Peripheral Dealer/Dist./ Retailer
- 95. Other_____ (Please specify)

2. **TITLE/FUNCTION** (Circle one)

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- 19. Chief Information Officer/Vice President/ Asst. VP IS/MIS/DP Management
- 21. Dir./Mgr. MIS Services, Information Center
- 22. Dir./Mgr. Network Sys., Data/Tele. Comm., LAN Mgr. /PC Mgr., Tech Planning, Administrative Services
- 23. Dir./Mgr. Sys. Development, Systems Architecture
- 31. Programming Management, Software Developers
- 41. Engineering, Scientific, R&D, Tech. Management
- 60. Sys. Integrators/VARs/Consulting Mgt.

CORPORATE MANAGEMENT
- 11. President, Owner/Partner,General Mgr.
- 12. Vice President, Asst. VP
- 13. Treasurer,Controller, Financial Officer

DEPARTMENTAL MANAGEMENT
- 51. Sales & Mktg. Management
- 70. Medical, Legal, Accounting Mgt.

OTHER PROFESSIONAL MANAGEMENT
- 80. Information Centers/Libraries, Educators, Journalists, Students
- 90. Other Titled Personnel

3. Do you use, evaluate, specify, recommend, purchase: (Circle all that apply)

Operating Systems
- (a) Solaris
- (b) Netware
- (c) OS/2
- (d) Unix
- (e) Mac OS
- (f) Windows NT
- (g) Windows
- (h) NeXTstep

App. Development Products ❒ Yes ❒ No

Networking Products ❒ Yes ❒ No

4. How many people are employed at this location and in your entire organization, including all of its branches, divisions and subsidiaries? (Select only one per column.)

	1. At this location	2. Entire Organization
A. 20,000 +	❒	❒
B. 10,000 –19,999	❒	❒
C. 5,000 – 9,999	❒	❒
D. 1,000 – 4,999	❒	❒
E. 500 – 999	❒	❒
F. 100 – 499	❒	❒
G. 50 – 99	❒	❒
H. 20 – 49	❒	❒
J. 10 – 19	❒	❒
K. 1– 9	❒	❒

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30. Medical/Law/Education
40. Wholesale/Retail/Trade
50. Business Service (except DP)
60. Government - State/Federal/Local
65. Communications Systems/Public Utilities/Transportation
70. Mining/Construction/Petroleum/ Refining/Agriculture
80. Manufacturer of Computers, Computer-Related Systems or Peripherals
85. Systems Integrators, VARs, Computer Service Bureaus, Software Planning & Consulting Services
90. Computer/Peripheral Dealer/Dist./ Retailer
95. Other_____ (Please specify)

2. TITLE/FUNCTION (Circle one)
IS/MIS/DP MANAGEMENT
19. Chief Information Officer/Vice President/ Asst. VP IS/MIS/DP Management
21. Dir./Mgr. MIS Services, Information Center
22. Dir./Mgr. Network Sys., Data/Tele. Comm., LAN Mgr. /PC Mgr., Tech Planning, Administrative Services
23. Dir./Mgr. Sys. Development, Systems Architecture
31. Programming Management, Software Developers
41. Engineering, Scientific, R&D, Tech. Management
60. Sys. Integrators/VARs/Consulting Mgt.
CORPORATE MANAGEMENT
11. President, Owner/Partner,General Mgr.
12. Vice President, Asst. VP
13. Treasurer,Controller, Financial Officer
DEPARTMENTAL MANAGEMENT
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70. Medical, Legal, Accounting Mgt.
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90. Other Titled Personnel

3. Do you use, evaluate, specify, recommend, purchase: (Circle all that apply)
Operating Systems
(a) Solaris (e) Mac OS
(b) Netware (f) Windows NT
(c) OS/2 (g) Windows
(d) Unix (h) NeXTstep
App. Development Products ❒ Yes ❒ No
Networking Products ❒ Yes ❒ No

4. How many people are employed at this location and in your entire organization, including all of its branches, divisions and subsidiaries? (Select only one per column.)

	1. At this location	2. Entire Organization
A. 20,000 +	❒	❒
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C. 5,000 – 9,999	❒	❒
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Buyer's Guide

GAINS & GAPS in NT 4.0

Win 95 interface looks nice, but pricing and lack of Plug and Play dampen release

NT Workstation
Good platform, but no Plug and Play
Grade: B

NT Server
Few new features, and they aren't well-documented; expensive upgrade
Grade: B

BY MARK MINASI

Microsoft Corp. has shipped the latest incarnation of its enterprise operating system, Windows NT 4.0, which brings generally good news for people running NT Workstation but mixed news for server users.

Workstation users will like the new Windows 95-style user interface and snappy graphics.

Server users will welcome the Domain Name Service (DNS) server that's finally included in NT Server 4.0. However, those same users will boo Microsoft's decision to force firms to upgrade their client licenses at more than 50% of the original price, as well as an architecture modification that may reduce some of NT's popular robustness.

Windows 95 interface

Despite the fact that Windows NT and Windows 95 are two very different operating systems, Redmond, Wash.-based Microsoft has created a Windows NT version of Explorer that nearly matches the Windows 95 implementation.

Changing color depths and screen resolution on the fly, an iffy thing under Windows 95, works smoothly on NT Explorer. NT Workstation also includes some features that Windows 95 users can get only in the Windows 95 Plus Pack. These include font smoothing and high-color icons. Microsoft has added some new applications, such as the 32-bit HyperTerminal communications program and a scanning program. But NT still lacks faxing capability. Unfortunately, one of Windows 95's greatest strengths, Device Manager, is unavailable because Windows NT 4.0 sadly lacks Windows 95's plug-and-play capability.

Internet tools

NT Server's enhancements reveal that Microsoft's affair with the Internet continues. Internet Information Server (IIS), the NT-based World Wide Web server that Microsoft has been giving away for months, is packaged with NT 4.0. Microsoft also bundles in Front Page, its basic Web page authoring tool. IIS is a good basic Hypertext Transport Protocol server, and the fact that it's free will keep the competition on its toes.

Front Page is a simple Hypertext Markup Language editor but with a twist, courtesy of Vermeer Technologies, Inc., the firm that originally made Front Page. Vermeer realized that many people want a few basic capabilities on their Web sites — forms, search engines, time/date stamps — but that putting together even a small Common Gateway Interface program can be difficult for nonprogrammers. So Front Page uses several extensions that make it possible for webmasters to build a site with forms, search engines and the like by including what Vermeer calls "bots" in the Web page. NT Server ships with the Front Page extensions needed to make these bots work.

NT 4.0, *page 90*

NT 4.0

CONTINUED FROM PAGE 89

There is still more in NT 4.0 for Internet users. After keeping it in beta for almost two years, Microsoft has finally shipped a DNS server with NT. It's a bit balky to set up, but this DNS server appears to finally bridge the gap between an Internet-approved name-resolution system, DNS, and NT's internal name-resolution system, Windows Internet Naming Service.

Doubling up

If users want faster access to their Internet service providers, they can attach multiple modems or Integrated Services Digital Network adapters to their NT machine and have them all dial up the provider at the same time. NT then combines the varied data streams into one high-speed data stream. This feature, called multilink Point-to-Point Protocol, is a good idea, but it works only if users' Internet providers support it.

Rounding out the improved Internet tools is the Point-to-Point Tunneling Protocol, which is intended to allow users to build multiple virtual private networks over the Internet. The documentation doesn't really detail how to set it up, but perhaps that will be remedied with a white paper soon after the release of Version 4.0.

Those rolling out dozens of NT installations will welcome Setup Manager and Sysdiff. Setup Manager lets users build response files that answer all installation questions, allowing NT to be installed almost unattended.

Sysdiff makes it simple to do quick mass installations of third-party software. The idea is to use Sysdiff to take a picture of a user's computer configuration before installing an application, then take another snapshot after the installation. Sysdiff then generates a script that can be used to automatically reproduce that installation on other machines. We were unable to test it because there's no documentation available. A Microsoft spokesman said Sysdiff documentation would appear "sometime soon on the Web."

Network troubleshooters will get some help from Network Monitor (Netmon), a reduced-functionality version of the tool currently found only in Systems Management Server. Netmon shows all network packets originating from or directed to a server. Trying to figure out why a workstation can't find a domain controller? Fire up Netmon, and it will provide some clues.

Windows NT 4.0 also comes with a newly enhanced Task Manager that puts system loading information right at users' fingertips. There's nothing there that couldn't be found with Performance Monitor, but the data is better formatted and is right at hand.

Not cheap

Windows NT 4.0 isn't without its bad points. The first, and probably most odious, is Microsoft's decision to force companies to upgrade their client licenses. The hidden cost of upgrading from NT Server 3.x to 4.x won't be in the several-hundred-dollar upgrade price. The big cost will be that customers must buy upgraded client licenses (at $25 apiece) for all users. At that price, if a customer has 10,000 users, it would have to pay $250,000 just to upgrade those users' permission to log on to its NT servers — even if it upgrades only one server to NT 4.0.

Microsoft says although that math is right, the reality isn't. "Any customer that large would be on the Select program, and they would essentially get the upgrades for nothing," a Microsoft representative said.

Some users may be troubled by Microsoft's architectural decision to move print and video drivers from user mode to kernel mode. Microsoft did this so that graphic-intensive applications will run faster on NT Workstation, and they do indeed run faster. But it also means that an errant print or video driver can crash an NT Server. Network managers may feel that the trade-off — an easily crashed server platform in return for better games support — was less than optimal. Microsoft's perspective is that there's really nothing to worry about as long as you stick with drivers tested in its lab. These include printers and video cards on the Hardware Compatibility List.

Windows NT 4.0 Workstation will be embraced by NT Workstation fans. How NT Server will fare remains to be seen, but those who buy it will find it more than adequate for using the Internet and intranets. ■

Minasi teaches seminars, writes books and consults on Windows NT. He is the author of *Mastering NT Server 4.0* and *Mastering NT Workstation 4.0*, published by Sybex. He can be reached at mark@mmco.com.

Simple speaks volumes in Organizer '97

BY JEFFREY GORDON ANGUS

The word to use here is "finally." Lotus Development Corp. has finally gotten past the pretty but marginally useful versions of its time-management software. It has reached a point where Organizer is both usable and useful, especially for users who appreciate simplicity.

Previous versions of the Cambridge, Mass., company's low-end contact and schedule program were easy on the eyes but disappointing to use because complex features such as OLE links didn't work the way you thought they should. Even worse, simple things such as font designations and accessing a day's worth of appointments were difficult or impossible to get.

Organizer '97 adds not only several advanced features but also includes some basics that should have been there before. Although I don't think any time-management and address book programs are stellar, Organizer '97 is a well-designed piece of work that's worth looking at.

As with its competitors, such as Now Software, Inc.'s Up-to-Date and Franklin Quest Co.'s Ascend, Organizer '97 was built to be much like the paper-based personal organizers people carry with them. This approach makes it easier for novices to figure out how to use the program. Familiar tabs such as Calendar, To Do and Address anchor the utility of this computerized system.

For the vast majority of users who spend most of their time within a minute of their desktop, the two key advantages of a computerized organizer are the ability to find any item and to network multiple users' organizers. Organizer '97 does both well, especially the networking, where it offers the ability to share individual sections — as opposed to all or none — and it integrates with electronic mail.

The product also supports a "Links" feature that gives users the ability to connect multiple entries such as an appointment with an address. The design is neither the most elegant nor the finest part of the program's interface, but it's adequate and takes only 10 minutes for a user to master.

What's new?

Lotus finally adds some features that users have long been waiting for. They include the ability to choose a typeface and format for entered text, and being able to view the calender one page per day. This view shows blocked-out times and appointments.

Organizer '97 also has some spiffy new features. You can combine entries from multiple sections for a printout, either a free-form one or one that conforms to a range of existing paper formats that fit popular physical organizers.

The product supports the Telephony Application Programming Interface standard for dialing a number from within the program. And it supports Microsoft Corp.'s OLE for users who are willing to put up with the performance hit.

Users will benefit from Organizer's new smooth interface

A final noteworthy new feature: Lotus has built Internet integration into the product, so users can embed uniform resource locators into their organizer or pop into Lotus' World Wide Web site (www.lotus.com).

Documentation is more than adequate. The manual is explicit, complete and well-organized. The online help is very good, but it would benefit from the linear, numbered procedure-list methods Lotus has mastered in other applications.

Organizer '97 is a serious competitor in the time-management category. It offers crisp performance and a smooth interface that more often than not doesn't require consulting the manual or online help. ■

Angus is project director at The Data Works Ltd. in Seattle.

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In Depth

Public Key Mystery

BY DEBORAH KERR

Information security will be a $13.1 billion business by 2000.

The men who created the cryptography that drives the industry all have fine reputations and distinguished careers.

What they don't have is a lot of money from their invention.

Why?

It was 1970. Only months earlier, a Hell's Angel at Altamont had twisted the knife that Charles Manson stuck in the back of the '60s. The Arpanet, mainframes and time-sharing terminals ruled in the computer world. Unbeknownst to one another, three men had embarked on separate quests to solve a problem: cryptography.

Through fate and determination, the three eventually got together. Working as a team, they found their answer in the mid-1970s. But they were so forward-thinking, they would wait 20 years for the world to ask the right question.

Now the world has, and public-key cryptography — invented by Martin Hellman, Whitfield Diffie and Ralph Merkle — is all the rage.

So why aren't Hellman, Diffie and Merkle rich?

Merkle, Hellman and Diffie at a June ceremony honoring their invention

Anticipation

In 1970, Martin Hellman, a young professor of electrical engineering at Stanford University in Palo Alto, Calif., had a bushy head of hair and a similar beard. Hellman's pilgrimage had begun in 1968 when he worked at IBM in Yorktown, Pa. There he rubbed elbows with Horst Feistel, the driving force behind IBM's work in cryptography.

When he read Claude Shannon's 1948 and '49 papers on information theory and cryptography, Hellman says, he had an epiphany. "I never before realized how closely related cryptography was to information theory," he says today, watching four toddler grandchildren make a jungle gym out of his oak-surrounded Stanford faculty home.

The Shannon papers discuss coding to reduce static on the radio. "Cryptography," Hellman says, "is the opposite. You introduce noise through a key. Someone who is listening in and doesn't know the key should be as confused as possible. But the legitimate receiver who knows this secret key is able to remove the static."

As Hellman searched the country for more information, an individualistic MIT undergraduate named Whitfield Diffie was following the same path. But Diffie's quest had started at a much earlier age. "I had been interested in cryptography ever since I was 10," he says. "I had a teacher who spent an afternoon on cryptography. I went home and had my father get me all the books out of the college library on the subject."

By 1973, Diffie was a research assistant who annoyed his artificial intelligence professors at Stanford by putting all his time and energy into cryptography. After he had finally pushed his AI instructor too far, Diffie took a leave of absence and traveled the East and West coasts in his VW bug, interviewing cryptography experts and digging up rare manuscripts.

Public key, *page 94*

Public Key Mystery

CONTINUED FROM PAGE 93

Meanwhile, Ralph Merkle, an obsessively clean-cut electrical engineering student at the University of California at Berkeley, wandered the campus consumed by cryptography.

"I had thought about how to provide secure communications between a terminal and a computer," says 6-foot-3-inch Merkle, who wears a cryonics bracelet on his right wrist, in his cluttered office at Xerox Corp.'s Palo Alto Research Center. "I realized that if both the terminal and the computer had random numbers, it wasn't impossible to reestablish keys over an open communications line."

While piecing together ideas on data encryption, Hellman continued to search for kindred spirits. Instead, Diffie found him — in September 1973. What started as a half-hour meeting ended as dinner for four at the Hellmans' house, with both couples talking until nearly midnight.

Hellman and Diffie began to work on a way to secure buying and selling from a home terminal. "I began thinking about how you could receive a message and transform it in a way that nobody else could achieve but that other people could recognize," Diffie says. "Then I realized you could create a message that only one person could read through credentials and a signature."

Hellman and Diffie submitted their first paper on the theory of digital certificates and signatures in December 1975. It was presented six months later at the National Computer Conference in New York.

Although it remains invisible to the end user, public key uses public and private keys to encrypt and decrypt messages, along with digital signatures and certificates to verify the sender's authenticity. It's loosely based on complex mathematical factoring.

Over at Berkeley in 1975, Merkle had formed the problem of secure communication independent of signature and certificate. He was attacking the distribution of the public key based on random numeric puzzles as his premise. When he read the Hellman-Diffie paper, Merkle looked up Hellman, who talked Merkle into switching his graduate work to Stanford.

In 1976, Hellman and Diffie helped solve Merkle's problem of public-key distribution and added digital signature. They produced and patented a system called the Diffie-Hellman. Their discovery launched the three into an intense orbit of media attention.

But the attention died as quickly as it was born. The inventors were ahead of their time: There wasn't yet a problem that needed their solution.

Fast-forward to 1996. Nostalgia for the '70s rages in a tongue-in-cheek way. And thanks to the explosion of the Internet, public-key cryptography has come of age. It's ballyhooed as the facilitator of online commerce and banking. It's buried in nearly every Internet, intranet and client/server transactional application: electronic banking, data warehousing, faxes, electronic mail, World Wide Web browsers, wireless telephones and routers.

Takin' care of business

"Public key is being used from the financial services sector to network carriers, [Internet service providers], phone companies, high-tech companies — just about any client/server environment," says David Morris, vice president at Cylink Corp. in Sunnyvale, Calif. Cylink uses Diffie-Hellman extensively, and licenses the technology to, among others, Motorola, Inc., Microsoft Corp. and Netscape Communications Corp., Morris says.

STANFORD UNIVERSITY NEWS SERVICE

Merkle, Hellman and Diffie. This photo ran in *Time* magazine in 1978 as part of a publicity whirlwind. But public key was ahead of its time, and the furor rapidly petered out.

Stephen Cobb, director of special projects at the National Computer Security Association in Carlisle, Pa., and an author on network security, stresses that no cryptography is perfect. But he says of public key: "At this point, we can't see a way of beating these systems without applying a lot of time and technology."

As an industry, the worldwide information security market last year reached $5.9 billion. It's expected to swell to $13.1 billion by 2000, according to Dataquest in San Jose, Calif.

The networking world is finally recognizing the contribution made by Diffie, Hellman and Merkle. The three were honored in June at a Cylink-sponsored awards ceremony in Burlingame, Calif.

Public key works. Lots of big companies make lots of big money off it. So the question remains: Why aren't Hellman, Diffie and Merkle rich?

These days, Merkle is still working on long-term inventions in the field of nanotechnology for Xerox. Hellman is in semiretirement as a professor emeritus at Stanford and has taken to flying glider planes. Diffie is an engineer at Sun Microsystems, Inc. in Palo Alto.

Hellman and Merkle have yet to see any real money from the patent. Diffie took some stock with Redwood City, Calif.-based RSA Data Security, Inc., which uses Diffie-Hellman in some of its technologies. To date, Stanford's Office of Technology Licensing has received only $70,560 from Cylink and has distributed about $10,000 apiece to Merkle, Hellman and Diffie.

And the inventors? To a man, they roll their eyes and shrug eloquently. They've been ordered not to talk about the case by attorneys because of pending patent litigation.

A long road

"The inventors are frustrated and rightly so. It's been a long, frustrating experience," says Joe Koepnick, senior licensing associate at Stanford's Office of Technology Licensing.

Neither Stanford nor Cylink will divulge the details of their agreement for patent rights. An audit last year at Cylink found no mismanagement on Cylink's part, Koepnick says.

One thing is certain: In any discussion of the case, RSA — Cylink's chief competitor — is mentioned frequently. RSA was recently acquired by Cambridge, Mass.-based Securities Dynamics Technologies, Inc.

Cylink and RSA formed a joint patent entity in 1990 and called it Public Key Partners. RSA developed an application algorithm for the Diffie-Hellman technology. The relationship, and Public Key Partners, dissolved in 1994. There are now two lawsuits pending. Each side accuses the other of patent infringement and invalidity. The overriding question is whether algorithms can be patented at all.

"It's quite a soap opera," says Bob Fougner, general counsel for Cylink. "RSA is attempting to invalidate the Stanford patents, and Cylink is now challenging the validity of the RSA patent. Our contention is that [Ron] Rivest [an inventor and one of RSA's founders] did not make a fair disclosure at the patent office about all the help he got from Marty Hellman that led to Rivest's specific algorithm."

RSA president Jim Bidzos contends that all RSA did was aggressively market the technology, which he says Stanford and Cylink dropped the ball on. "RSA led the way in developing the technology and getting it out to the vendor community. We built on the best invention, marketed it and I personally spent 11 years on this," Bidzos says. "We've paid millions of dollars to MIT, much of which goes back to the investors. In the case of Stanford, Cylink has paid peanuts."

The Diffie-Hellman patent will expire in April 1997.

So why aren't Hellman, Diffie and Merkle rich?

The intrigue, charges and countercharges do little to answer the question. Whatever the outcome, though, the principals seem sanguine. A little older, more philosophical and a tad more jaded, Doctors Hellman, Diffie and Merkle personify what Hellman calls "the Stanford mentality." He says, "Stanford is a type of academia cult in which reputation is more important than making money." ■

Kerr is a freelance writer in northern California. She specializes in Internet commerce and related security issues. Her E-mail address is dkerr@aol.com.

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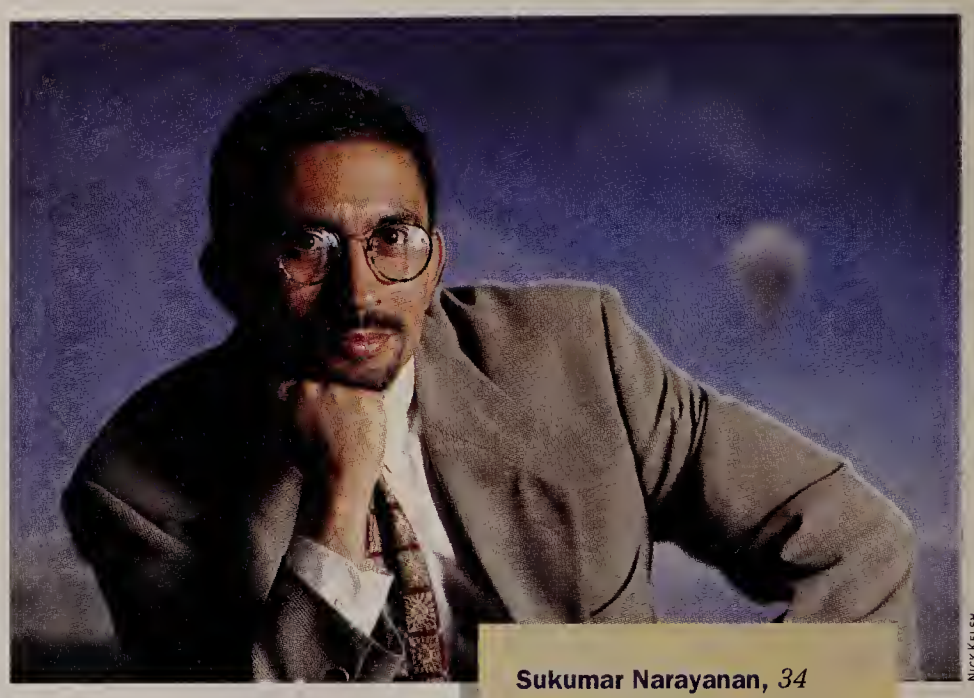
View *from the* TOP

A veteran SAP consultant reflects on his experiences, and prospects, with the industry's hottest skill.


NICK KELSH

Sukumar Narayanan, *34*

Title: *Principal consultant, Price Waterhouse, Philadelphia*

Current client: *A Fortune 500 specialty chemical company based in Philadelphia, January 1995 to present*

Background: *IS consultant, 11 years; SAP consultant, five years; joined Price Waterhouse in January 1990*

BY LESLIE GOFF

An independent consultant with SAP expertise can work just about year-round and command a top hourly rate. Yet some information systems professionals prefer to stay within a structured environment rather than strike out on their own.

Sukumar Narayanan, 34, a principal consultant at Price Waterhouse LLP in Philadelphia, recently spoke with *Computerworld* about how he gained his experience in SAP AG applications, why he has steadfastly remained within the corporate fold and what the money potential *really* is.

CW: Describe your current project and your role in it.

NARAYANAN: I'm project manager for a worldwide SAP implementation. I'm responsible for about 25 to 30 people — a mix of internal staff and external consultants. This is my first full-scale project management role.

CW: Why were you chosen for this role?

NARAYANAN: I had been in charge of pieces of a project, like the supply chain, so I had project leader and implementation experience. I had worked for another chemical industry client, a consumer products client and a high-tech client.

CW: How did you come by your SAP expertise?

NARAYANAN: Price Waterhouse asked me to become a SAP consultant because I had the right mix of technical and business skills. My prior experience was in custom development work focused on the supply chain, from inventory management to order fulfillment.

They first asked me about a year before I agreed to make the switch. My initial concern was that I didn't want to tie my future to this one package. But as I started to think more about it, I realized a lot of custom work was being done in niche applications developed around other packages. Very few companies were doing custom apps from scratch anymore because they just weren't cost-effective.

So, the way my career was progressing, I started to think of myself as a supply-chain business consultant first and my technical skills as a value-added that I brought to the table. Using my business skills as a base, I could constantly refresh my career in new technologies. So I trained in R/2 and, later, R/3.

CW: How has becoming an SAP consultant changed your playing field?

NARAYANAN: Making the move from custom development to SAP has definitely enhanced my employability and my professional development, simply because of the market demand. I don't think I would have gotten the roles I've had, such as becoming a project leader, in a more mature market.

CW: With all the hype about contract SAP salaries, why have you chosen to work for a large consulting house?

NARAYANAN: As an independent consultant, you can probably command close to $500,000 a year. That's if you were busy 200 days on a large project. But working for a company like this — although the income potential isn't quite as high — if there's a downturn in the SAP market, Price Waterhouse will retool me so I can play in a new market.

Also, as an independent consultant, you typically sell yourself as an expert, so you don't get to manage a large implementation project. Usually, there's a functional area that you are focused on, and it's really just your SAP expertise that you're sought after for.

The way I view it, I could cash in for a short period of time on my own and then maybe come back to a more stable environment, or I could just go out and be a free agent for the rest of my career.

CW: What advantages are there to being with a consulting firm?

NARAYANAN: I was attracted to Price Waterhouse in the first place because of the atmosphere, the level of commitment. There's really a partnership between the company and its consultants. They've invested a lot in me. Plus, here I'm engaged in developing and improving our methodology and working on other internal projects, like mentoring and developing other Price Waterhouse professionals.

When I think of [independent consulting] opportunities, I think, "Yeah, it might be 50% more money, but would it be the same working environment?" I've built strong relationships with people here. If I continue to progress the way I have, I'll be a long-term player in this firm, so I will do well financially in that respect. But it's a given that in the short term I won't make as much as if I were in the open market.

CW: What's your take on the current level of demand for SAP expertise?

NARAYANAN: I think the demand may be leveling off a bit, gauging from calls that I get from recruiters, but it's still very high. But it tends to come in waves. Sometimes it's quiet; other times I'll get two calls a week from various recruiters around the country.

There is still a lot of opportunity out there. SAP is saturating the Fortune 500, but it's getting ready to move into smaller markets. Plus, there's hidden demand in companies that have been sitting on the fence or are going to have to deal with year 2000 problems.

CW: What are your future plans?

NARAYANAN: In the short term, my focus is on getting my current client up and running and successful by the late fall. After that, Price Waterhouse and I will determine the next best thing for me to do. I guess I'll move on to managing another, perhaps larger, project — another large global implementation. And perhaps I'll take on some other responsibilities. ■

Goff is a freelance writer in New York.

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Regional Scope: Washington, D.C.

Capital callings

Bureaucracy, of course. But Washington's other hiring hotbed is in the Internet and communications.

By Rosemary Cafasso

If you're thinking that an information systems career in the Washington area would automatically lead to a government job, think again. Sure, government agencies are hanging out the help wanted sign. But the region also has become a hotbed of Internet and communications activity.

"It seems like just [recently] everyone wanted to get on the 'net, and now everyone wants an intranet," says John Gay, chief information officer at the Fairfax County (Va.) public schools and president of the Capital Area chapter of the Society for Information Management. "Every skill from [World Wide] Web management to Web software development is in demand."

The greater Washington area is home to companies such as MCI Communications Corp., America Online, Inc. and UUnet Technologies, Inc., and IS executives in the public and private sectors say they are on the prowl for people with Web and general networking skills.

No limits

"The difference with Washington is that the government, by law and design, dictates that there be the broadest range of hardware and software environments," says Carol Covin, author of *Covin's Washington Area Computer Job Guide* and director of business development at Xybernaut Corp. in Fairfax, Va.

"So, for an IS professional, you can find a flavor of anything — intranets, internets, Java, [electronic data interchange] — all the things that are hot," Covin says. Besides Web experience, IS managers and recruiters say related skills, such as graphics, multimedia, imaging and document management, are increasingly important.

And the focus on the Internet has made networking skills such as administration and management all the more crucial. American University, for example, is looking for network administrators and troubleshooters, says Joyce Deroy, acting executive director of university computing.

Even though there are more opportunities in the private sector, federal agencies are still hiring — albeit at a slow pace. The Library of Congress, for example, has a major Internet project under way and is looking for talent in Web development. Its Web site (www.loc.gov) is essentially the front end to a massive project under way to transfer the library's materials to an online format.

"We want people who know the Web and browser technology and the architecture for storing a great deal of digital information — and we are talking millions of items," says Herbert Becker, director of information technology services at the Library of Congress.

The American Red Cross is another example. The organization may be well over 100 years old, but it is focusing on the most current technologies to run its operations. One of the key initiatives is its Web site (www.redcross.org), which is being used to post information on disasters and blood requirements and volunteer and chapter information.

Beyond the Internet, other skills in demand are client/server expertise, including software development. Based on interviews with several IS shops, there is limited interest in mainframe skills.

Steven Yohai, CIO at the Department of Housing and Urban Development, says he occasionally needs to hire mainframers with operations backgrounds to help run the data center because "that technology has not gone away." But he isn't actively recruiting for any major new mainframe development initiatives.

But at least one recruiter predicts that mainframe skills will soon become a much hotter commodity as year 2000 reprogramming efforts become a top priority. ■

Cafasso is a freelance writer in Walpole, Mass.

Capital career

There are more than 4 million workers in the Washington region. Of that group, 16.7% are employed by the federal government, according to the Washington D.C. Convention and Visitors Association.

• For general information on Washington, try logging on to **www.washington.org** on the Web. It provides tourist information, a guide to hotels and restaurants and general city information.

• **Wanted: CIOs.** As part of the 1996 Information Technology Management Reform Act, nearly two dozen federal agencies are required to appoint a chief information officer. But according to a *Computerworld* story in July, not all agencies were expected to meet the August deadline because it is so difficult to find qualified candidates who are willing to take on these tough assignments. And these government CIOs would be paid about $115,600 a year – much less than they could likely command in the private sector.

Salaries
STARTING PAY

Sample paychecks for IS professionals in Washington:

Entry-level computer programmer	$574 per week
Entry-level computer systems analyst	$737 per week
Entry-level systems analyst supervisor	$1,174 per week

Source: Bureau of Labor Statistics

Unemployment
WORK ETHICS

Unemployment rates in the capital region:

Washington region	3.8% (as of May)
District of Columbia	8.7% (as of May)
U.S. average	5.3% (as of June)

Source: Bureau of Labor Statistics

Top employers
POWER PLAYERS

The region's Top 5 public companies represent a range of industries:

Company and location	1995 revenues	Employees
Mobil Corp., *Fairfax, Va.*	$74.8 billion	50,400
Lockheed Martin Corp., *Bethesda, Md.*	$22.8 billion	160,000
MCI Communications Corp., *Washington*	$15.3 billion	50,367
Marriott International, Inc., *Bethesda, Md.*	$8.9 billion	179,400
US Air, *Arlington, Va.*	$7.4 billion	42,082

The Top 5 performers by revenue growth are dominated by Internet and communications companies:

Company and location	1995 revenues	% change from 1994
America Online Inc., *Vienna, Va.*	$394.3 million	240.8%
UUnet Technologies, Inc., *Fairfax, Va.*	$94.5 million	185.1%
Storage USA, Inc., *Columbia, Md.*	$68 million	163.2%
PSINet, Inc., *Herndon, Va.*	$38.7 million	154.5%
Metrocall, Inc., *Alexandria, Va.*	$110.9 million	91.5%

Source: *The Washington Post*, special issue, The Post 200, April 1996

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DATA ADMINISTRATOR

Responsible for providing data analysis expertise to IS development teams in the areas of definition, development, and deployment of global data assets. Participate in the design process; define business process flows, entity relationship diagrams, and database objects; and provide data modeling support to IS development staff. This includes creation of business data models, maintenance of a CASE repository, QA review, and standards definition. **REQUIRES:** BS degree in a relevant technical discipline, along with a strong technical background which will include: 6+ years full life cycle design and development, 4+ years data administration, 3+ years with CASE tools, and superior communication skills. Experience with client/server applications, PowerBuilder, ORACLE Designer 2000 is a plus.

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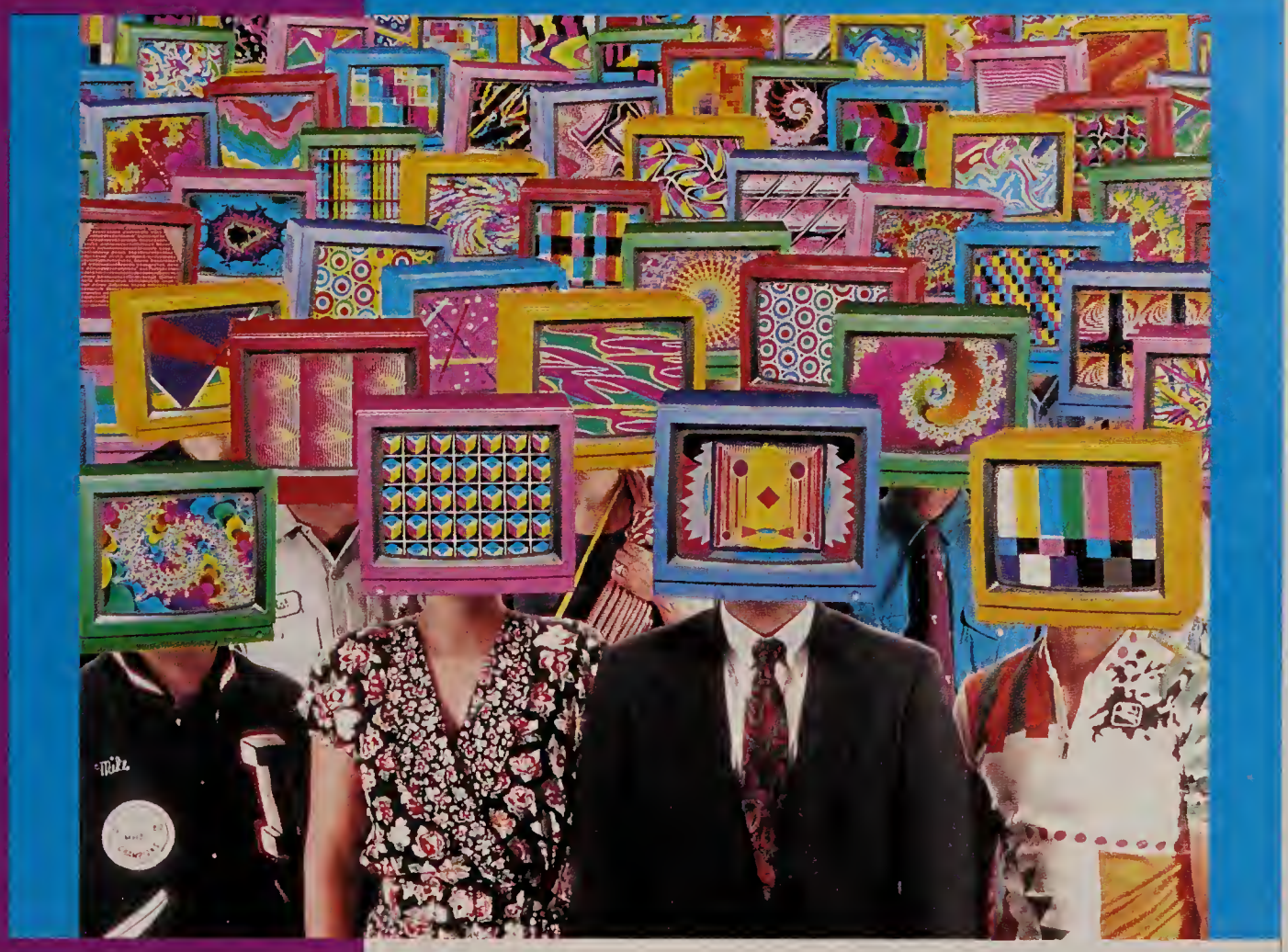

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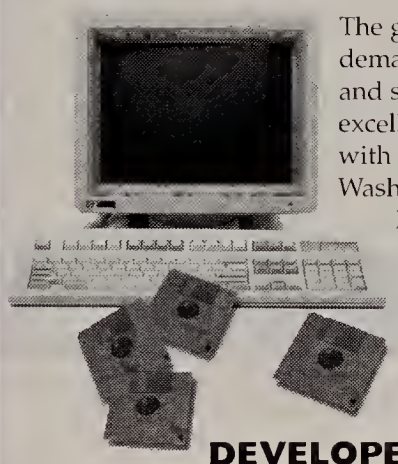

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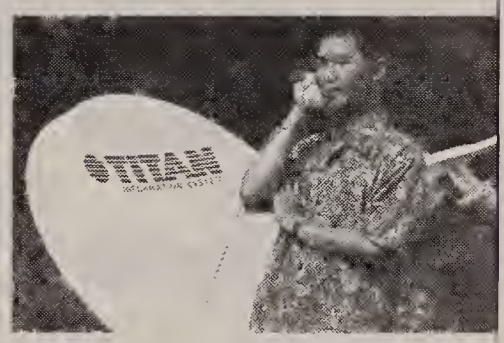

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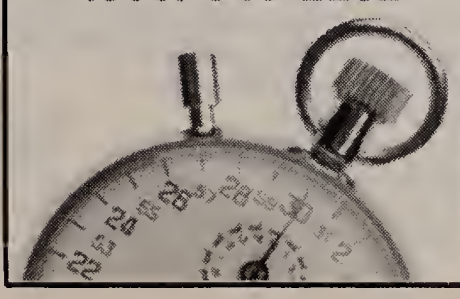

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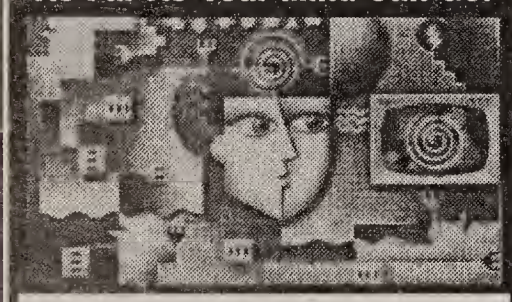

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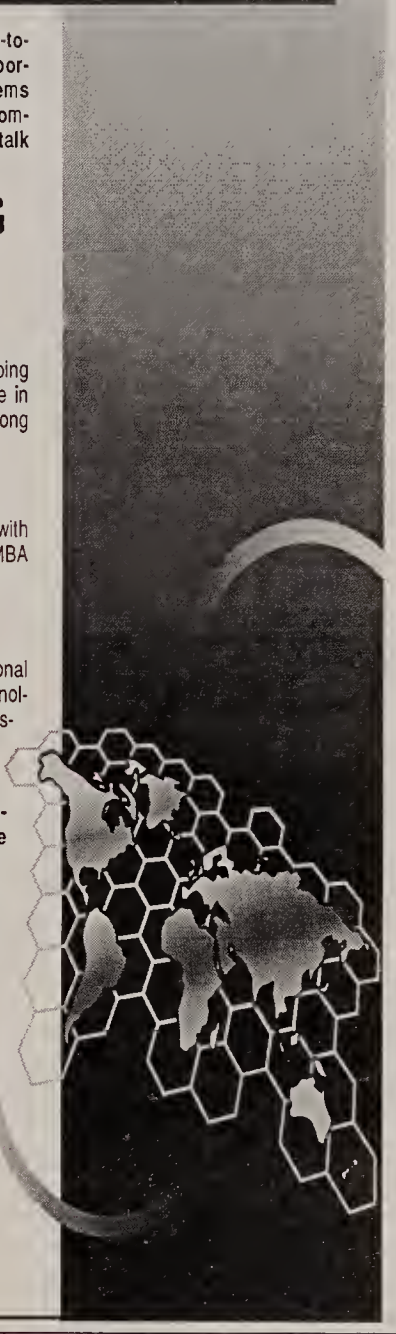

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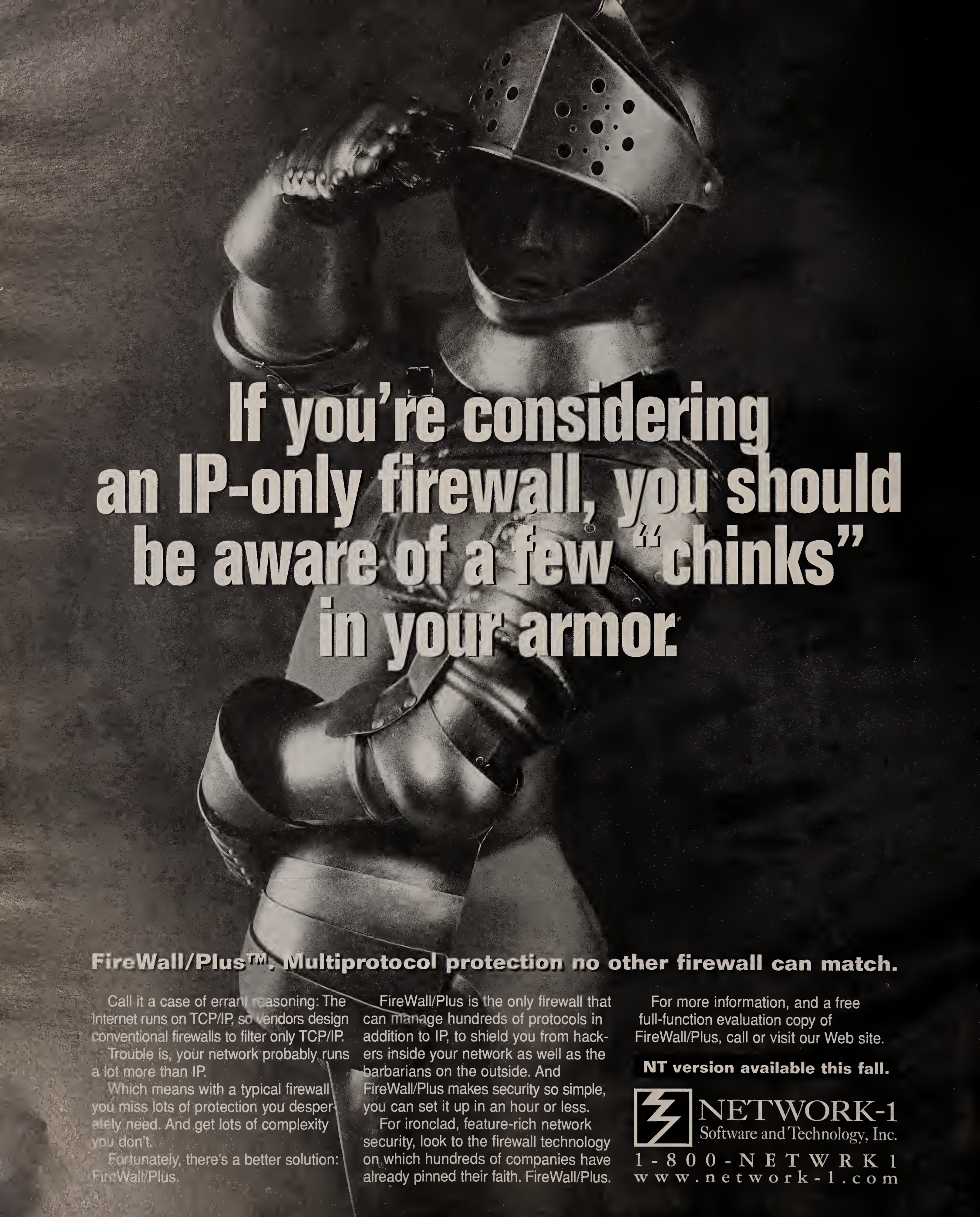

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Marketplace

Windows 95 utilities market dwindling

By Stewart S. Miller

The release of Windows 95 last year signaled a shift in the utilities market. By continuing to pack utilities into the operating system, Microsoft Corp. may send the add-on utilities market into obsolescence with future releases of Windows 95.

"The direction of Windows 95 is to absorb as many utilities as makes sense. That's easy for Microsoft to do, and it makes the operating system more usable and easier for the average user," says Scott Winkler, an analyst at Gartner Group, Inc. in Stamford, Conn.

Web site freebies

Windows 95 already has absorbed the backup and uninstaller utility categories. Also, viewers and converter programs can be downloaded for free from Microsoft's World Wide Web site.

For instance, the site offers Internet Assistant for Word, which makes viewing and writing Hypertext Markup Language documents as easy as editing a word processing document, without any additional cost. Even users who don't own Microsoft Word can view Word documents by using a free utility called Microsoft Word Viewer, which converts Word files into a viewable format.

Such free utilities prompt the question, "Why buy the cow when I can get the milk for free?" The advent of Windows 95 means it isn't cost-effective to purchase a separate product, and so the market for most utility categories is shrinking. As Windows 95 moves to absorb those utilities into its operating system, vendors with tiny market shares will founder.

But diagnostic utilities and virus scanners are two categories that show continued growth. The utilities that remain in demand are those that keep systems free of errors and problems that can cause crashes.

> "The direction of Windows 95 is to absorb as many utilities as makes sense."
>
> —*Scott Winkler, Gartner Group*

One way to accomplish that is to inoculate your system against damaging viruses that can make your computer ill.

Computer antibiotics

One of the biggest dangers users face is losing data to a virus. Windows 95 doesn't have a virus checker, so a virus disinfectant is necessary. And because new viruses are always spreading, it's important to purchase a product that can be updated to detect them.

Symantec Corp.'s Norton AntiVirus (about $75) and McAfee Associates, Inc.'s VirusScan (about $50) each can detect and remove more than 7,500 viruses. Each product is supported by its manufacturer to keep up-to-date with known infections.

TouchStone Software Corp.'s PC-cillin 95 (about $50) can detect and remove more than 6,000 viruses. Users need to configure the program to scan Microsoft Word templates, document files and macros for viruses.

PC checkups

Utilities to monitor and save your computer from file errors and crashes include Symantec's Norton Utilities for Windows 95 (about $129, or $70 to upgrade) and First Aid 95 from CyberMedia, Inc. (about $50).

Symantec's offering is the dominant product.

"Norton Utilities owns the majority of the market — around 80%," says Rob Enderle, an analyst at Giga Information Group in Santa Clara, Calif. The remainder of the market belongs to utility vendors such as CyberMedia, McAfee and TouchStone.

CyberMedia's First Aid can clean out duplicate instructions that occur within the registry when applications tools or desktop attributes are changed. It also examines the settings each time an application is started; it goes through every application and sees which settings need adjustment and fine-tunes the PC.

"First Aid 95 is selling on the perceived weaknesses of Windows 95; it creates the feeling of a security blanket," Enderle says.

First Aid's CyberFix feature offers a wizard that uses your Internet connection to retrieve from Microsoft's Web site the most recent Windows 95 update. First Aid's Retro-Fix feature allows you to repair any difficulties that arise from installing hardware or applications.

Symantec's Norton Utilities offers an array of heavily armed utilities to keep track of disk activity and system usage. Norton Speed Disk fixes disk fragmentation, which can occur after multiple application installations and deletions. Norton Disk Doctor keeps a system in full working order by detecting disk errors and providing the ability to fix them. Norton System Doctor scans a disk surface for errors and keeps critical disk information backed up for a quick rescue should it ever be lost.

Although simple diagnostic utilities in Windows 95 can scan for errors, it's unlikely that third-party utilities that diagnose problems and hunt down viruses will be phased out because of future releases of Windows 95. ■

Miller is a writer at Executive Information Services in Carlsbad, Calif.

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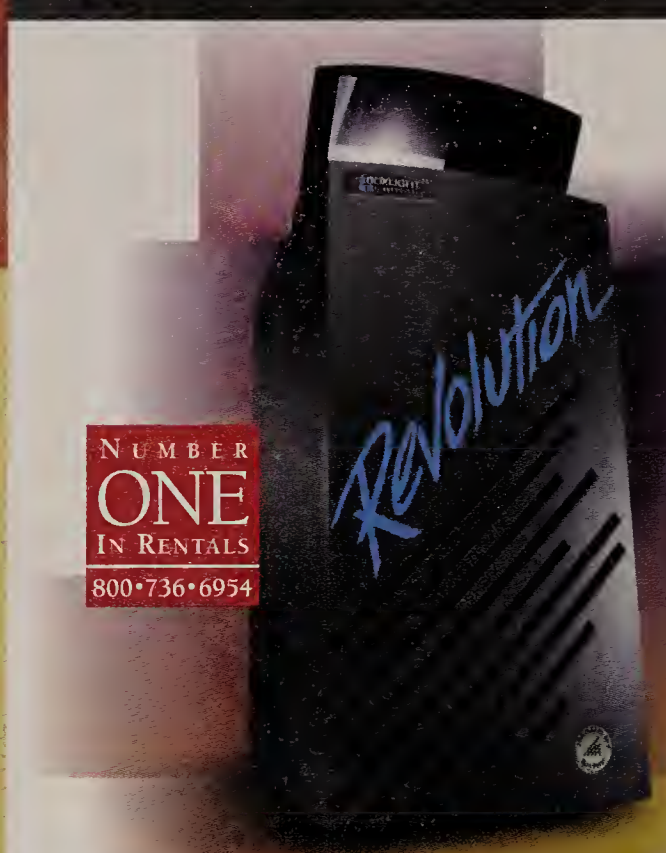

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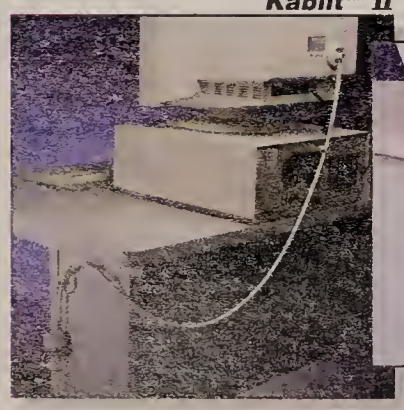

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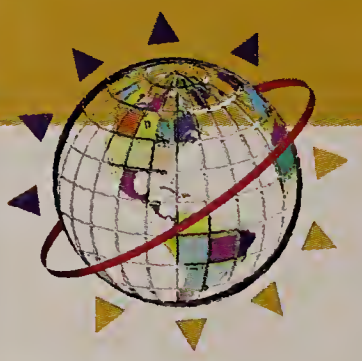

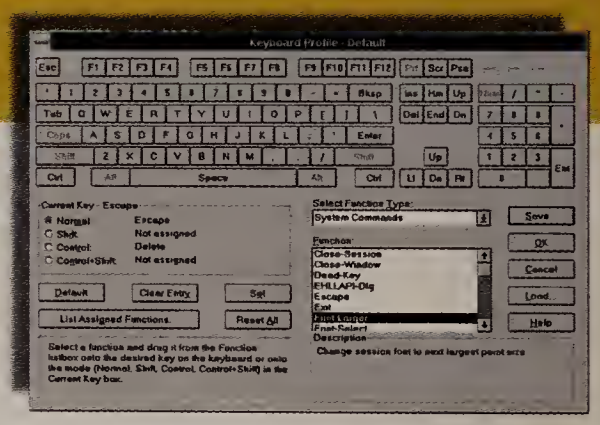

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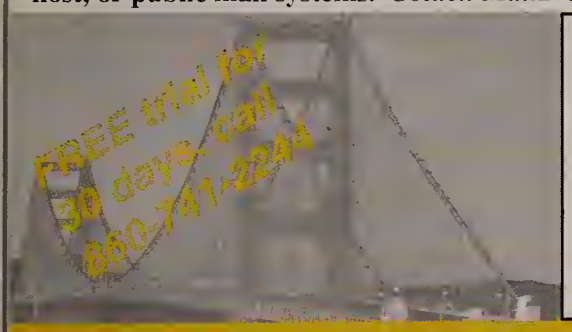

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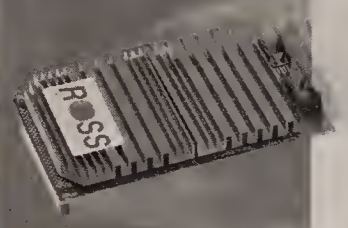

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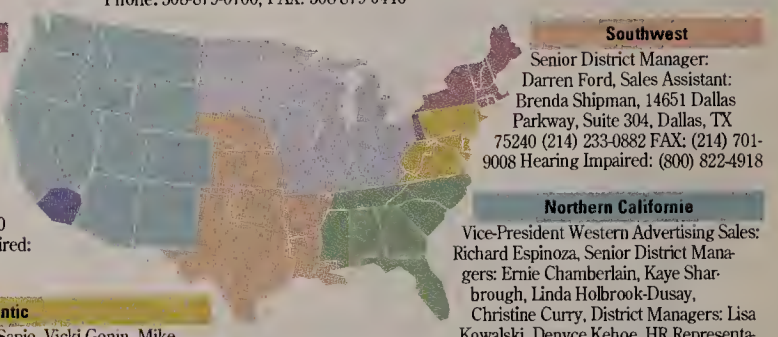

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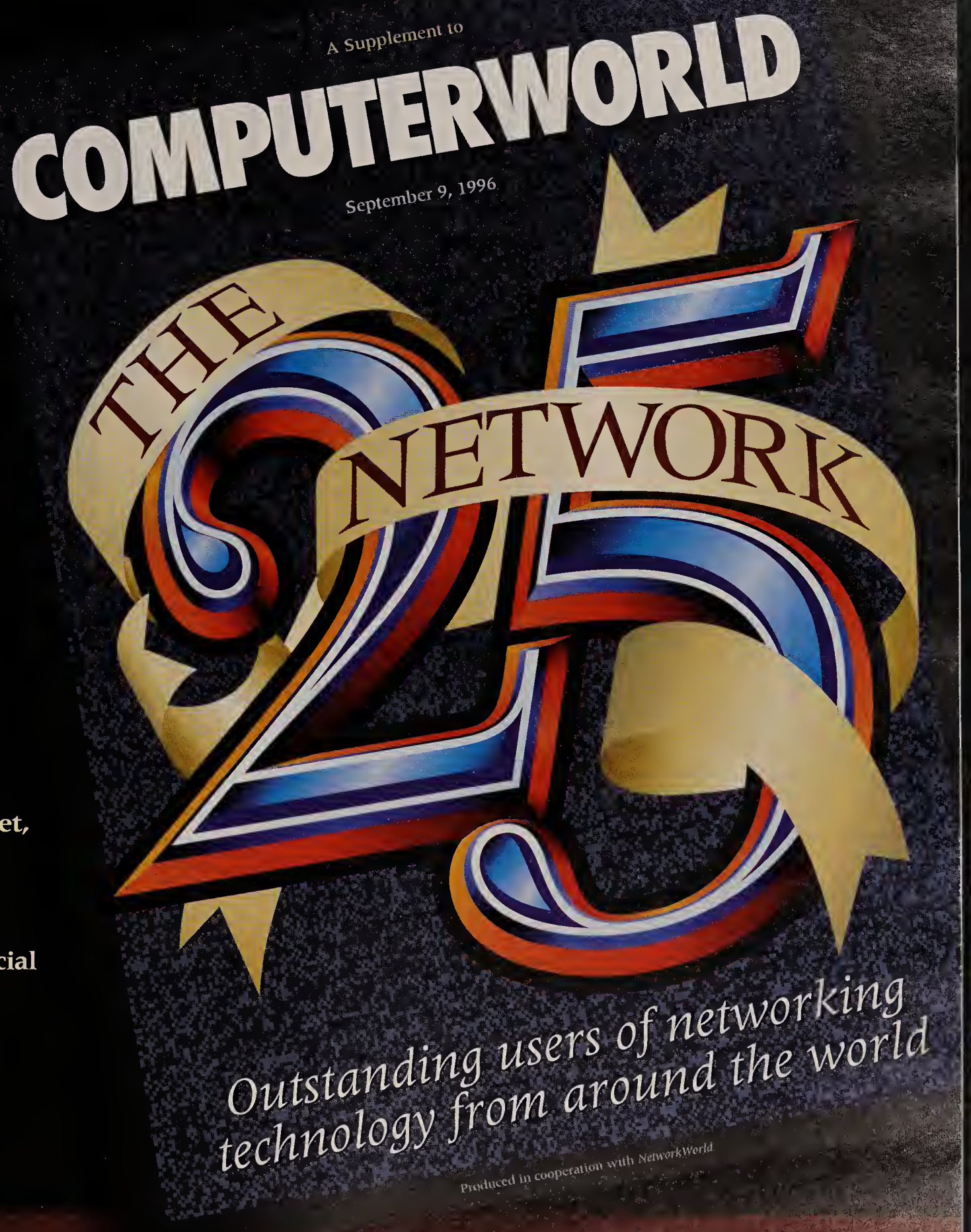

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Cashing in on Year 2000

Reprogramming work, consulting jobs may spell rising stocks for some vendors

By Stewart Deck

"Two-thousand-zero-zero
Party over
Oops, out of time.
Tonight we're gonna party like it's 1999."
— From "1999" by the artist formerly known as Prince

Three years, three months and counting until "Oops, out of time" could crop up in mainframe legacy systems.

As the two-digit date fields spin closer toward twin goose eggs, the Year 2000 issue has even caught the attention of Congress and the general business press — they are starting to notice the nice round $200 billion to $500 billion price tag to fix this mother of all data problems.

Fortune magazine recently published a story about it in relation to a Wall Street feeding frenzy for Year 2000-related stocks. The article was spiced with rumors of newsletter tips, inside information and healthy profits that early investors could rake in.

Gold mine

Despite the legitimate concerns of corporate information systems groups about the Cobol code on their mainframes, many companies are rubbing their hands with glee and viewing the Year 2000 issue as a potential gold mine. These firms will be the ones that provide the specific expertise needed to fix each of the estimated 250 billion lines of code.

Several of these vendors have been involved in consulting roles, code maintenance services and software fixes for years. Others have plowed into this money-making space more recently, touting their tools and newfound status as Year 2000 "solutions providers."

One company that many analysts mention as a solid Year 2000 play is **Viasoft, Inc. (Nasdaq:VIAS)**. *Fortune* dubbed Viasoft "one of the strongest of the Year 2000 stocks." Wendell Laidley, an analyst at Wessells, Arnold and Henderson LLC in Minneapolis, says Viasoft has combined its "long-standing expertise in Cobol maintenance" with a lengthy customer list to earn approximately 35% of its most recent revenue from Year 2000 fixes.

"Viasoft is seen by some investors as *the* company with Year 2000 solutions" because it can go directly to the source of the problem: the lines of Cobol code, says David Takata, an analyst at Gruntal & Co. in Beverly Hills, Calif.

Other software vendors have positioned themselves to benefit from the turn-of-the-century uproar. Many of these tools were designed to sniff out potential date field problems and point out where code needs to be fixed.

> "I'm sure some of the direct-play stocks will do fine for a couple of years, but this problem could well be solved quickly."
>
> **– Michael Murphy "California Technology Stock Letter"**

These companies include **Platinum Technology, Inc. (Nasdaq:PLAT)**, **Micro Focus Group (Nasdaq:MIGFY)**, **Computer Associates International, Inc. (NYSE:CA)** and **Cayenne Software, Inc. (Nasdaq:CAYN)**. Laidley says some of the companies in this sector are merely "low-level players" looking to cash in with recently converted tool sets. Interested investors will need to do research to discover the difference between the companies with foundation knowledge and those with shiny new tools, Laidley adds.

These software stocks are just one of the Year 2000 investment categories in an investment report by William Rabin at J. P. Morgan Securities, Inc. in New York. Rabin says several small to midsize consulting firms and large systems integrators also will benefit from Year 2000 problems. Rabin's full report is available at www.jpmorgan.com/MarketDataInd/Research/Year2000/index.html.

CHRIS PYLE

The consulting companies most likely to benefit — by placing their staff within corporate information technology departments — include **Computer Horizons Corp. (Nasdaq:CHRZ)**, **Amdahl Corp. (Amex:AMH)**, **Keane, Inc. (Amex:KEA)** and **Data Dimensions, Inc. (Nasdaq:DDIM)**. Many of these companies simply send a team of programmers in to search for and fix lines of code.

Amdahl recently entered the Year 2000 game by purchasing Trecom Business Systems, another consultancy with program troubleshooters. Keane and Data Dimensions also provide contract programmers that work with specific methodologies to ferret out those pesky date fields and adjust them to handle four digits instead of two.

If the problem looks too big to be handled by contractors, large systems integrators, including **Electronic Data Systems Corp. (NYSE:EDS)**, **Computer Sciences Corp. (NYSE:CSC)** and **American Management Systems, Inc. (Nasdaq:AMSY)** will be called in for major remodeling work, according to Rabin's report.

Other analysts have a different view of how much of a windfall the Year 2000 problem will really prove for investors. Michael Murphy, a financial analyst and editor of "The California Technology Stock Letter" in Half Moon Bay, Calif., says investing in companies that offer direct Year 2000 fixes is a bit shortsighted.

"I'm sure some of the direct-play stocks will do fine for a couple of years," Murphy explains, "but this problem could well be solved quickly" and strand investors trying to play the momentum of the market.

Getting relational

Instead of just trying to fix lines of Cobol code, many companies may decide the time has finally come to convert their Cobol databases to relational databases, Murphy says. Since many companies are already considering the switch, they may decide to sidestep the Year 2000 problem by switching over to relational database vendors such as **Oracle Corp. (Nasdaq:ORCL)**, **Informix Corp. (Nasdaq:IFMX)**, **Sybase, Inc. (Nasdaq:SYBS)** and even **IBM (NYSE:IBM)**.

Whatever advice you take, keep in mind that the Year 2000 problem won't drag on indefinitely. Vendors are starting to compete for the largest contracts, and their cash registers are starting to ring. Wall Street analysts say the earlier investors do their research and make their choices, the more they'll look forward to 2000.

The Week in Stocks

Gainers

PERCENT

Netrix Corp.	21.2
Computervision Corp.	19.3
Network Computing Devices	17.9
Software Spectrum Inc.	16.2
Lycos Inc.	15.9
Analysts Int'l	13.7
4th Dimension	11.6
Newbridge Networks Corp.	11.3

DOLLAR

Newbridge Networks Corp.	6.50
Analysts Int'l	5.00
CompUSA Inc.	4.25
Software Spectrum Inc.	4.25
BMC Software Inc.(H)	2.75
McAfee Associates	2.75
Xerox Corp.(H)	2.63
Ceridian Corp.	2.25

Losers

PERCENT

Zilog Inc.	-34.7
Merisel(L)	-25.0
Arbor Software	-14.6
Intuit Inc.	-12.8
VanStar Corp.(H)	-12.4
Forte Software	-11.8
Secure Computing Corp.	-11.1
Cayenne Software Inc.	-10.0

DOLLAR

Zilog Inc.	-8.75
Arbor Software	-6.00
Peoplesoft(H)	-5.38
Intuit Inc.	-4.75
US Robotics	-4.38
Forte Software	-3.63
Cabletron Systems	-3.13
Gateway 2000 Inc.(H)	-2.88

Industry Almanac

Investors aren't dialing up

Confronted by the entrance of several telecommunications giants into their market, Internet service providers are trying to hold on to their turf. In the meantime, investors are doing little more than holding on to their shares.

Pure Internet access firms such as **Netcom On-Line Communications Services (Nasdaq:NCOM)** and **PSINet (Nasdaq:PSIX)** now face competition from telecommunications giants such as **AT&T Corp. (NYSE:T), MCI Communications Corp. (Nasdaq:MCIC), Sprint Corp. (NYSE:FON)** and a slew of regional Bell operating companies. Or, like UUnet Technologies, Inc., they are being bought up.

That means things have remained relatively stagnant for these Internet-related stocks, even with recent deals and continued growth of the Internet access market. The experience of pioneering service provider Netcom is typical, despite an agreement that boosts its profile.

Netcom recently inked a deal by which **Microsoft Corp. (Nasdaq:MSFT)** would refer Internet access business exclusively to the San Jose, Calif., firm.

But Netcom still focuses too much on consumer accounts, where competition is at its fiercest, without expanding its commercial business, says Rakesh Sood, an analyst at San Francisco brokerage Hambrecht & Quist. Sood has a "hold" rating on Netcom shares.

Netcom's commercial business has ranged from 15% to 20% of sales. To boost that percentage and gain business interest, Netcom has to risk some of its minimal margins to upgrade its network to offer full Integrated Services Digital Network access speeds, Sood says.

"In the absence of additional revenue streams or an inability to raise subscription rates, Netcom is going to be forced to live with a clamped-down revenue stream," and stock performance will continue to flounder as a result, Sood predicts.

— Tim Ouellette

Squeeze play

Heavy competition has depleted Internet access profits and deflated stocks that are pure plays in this area

	June 21	July 12	Aug. 30	Sept. 3	52-week high
America Online	40	37 3/4	30 1/2	29 15/16	71
BBN	22	18 1/4	18 3/8	18 5/8	48 3/4
Netcom	29 1/2	22	19 3/8	19	91 1/2
PSINet	13 1/4	9 1/2	10 7/8	10 5/8	29

Exch	52-Week Range			Sept. 6 Noon	Wk Net Change	Wk Pct Change
Communications and Network Services						**UP 0.31%**
COMS	53.63	33.50	3 COM Corp.	47.63	0.38	0.8
AIT	66.88	49.63	AMERITECH Corp.	50.50	-0.50	-1.0
T	68.88	49.25	AT & T	52.63	0.38	0.7
ASND	71.25	15.50	Ascend Communications	53.75	1.00	1.9
8NYN	13.63	5.13	8anyan Systems Inc.	5.75	0.13	2.2
8AY	50.00	20.25	8ay Networks Inc.	26.50	-0.50	-1.9
8EL	80.38	43.50	Bell Atlantic Corp.	55.63	-0.50	-0.9
BLS	45.88	33.88	8ellsouth Corp.	36.13	-0.38	-1.0
BRKT	32.75	6.88	8rooktrout Technology	26.00	1.00	4.0
CS	87.75	52.00	Cabletron Systems	57.50	-3.13	-5.2
CSCC	74.75	14.00	Cascade Communications	68.63	0.00	0.0
CGRM	25.13	12.25	Centigram Communications	16.13	-0.88	-5.1
CSCO	59.38	30.50	Cisco Systems Inc.	54.00	0.88	1.6
CLIX	9.25	4.50	Compression Labs Inc.	6.38	-0.38	-5.6
CMNT	10.50	4.00	Computer Network Tech.	5.50	-0.13	-2.2
XCOM	14.50	8.00	CrossComm	9.50	-0.25	-2.6
DIGI	64.00	21.88	DSC Communications	28.81	-0.88	-2.9
FORE	44.75	15.38	FORE Systems Inc.	32.38	-2.63	-7.5
GDC	21.88	9.13	General Datacomm Inds.	11.00	0.13	1.1
GSX	42.00	28.00	General Signal Networks	41.13	1.25	3.1
GTE	49.25	36.50	GTE Corp.	38.38	-1.00	-2.5
LU	39.25	29.75	Lucent Tech.	37.13	0.13	0.3
MCIC	31.13	22.38	MCI Commmunications Corp.	25.75	0.25	1.0
MNPI	34.50	5.50	Microcom Inc.	9.25	0.75	8.8
NETM	34.00	7.63	NetManage Inc.	8.06	-0.69	-7.9
NTRX	10.88	3.63	Netrix Corp.	7.88	1.38	21.2
NCDI	10.25	2.88	Network Computing Devices	5.75	0.88	17.9
NWK	42.00	11.50	Network Equipment Tech.	12.00	-0.75	-5.9
NETG	27.63	15.00	Network General	16.63	-0.75	-4.3
NN	74.25	25.00	Newbridge Networks Corp.	64.00	6.50	11.3
NT	55.88	31.50	Northern Telecom Ltd.	50.13	0.00	0.0
NOVL	20.63	10.13	Novell Inc.	10.75	0.00	0.0
NYN	59.25	42.38	Nynex Corp. (L)	42.63	-0.25	-0.6
OCTL	30.50	12.63	Octel Communications Corp.	28.88	-1.06	-3.5
ODSI	43.25	16.50	Optical Data Systems Inc.	20.00	0.75	3.9
PAC	35.25	25.88	Pacific Telesis	32.38	0.13	0.4
PCTL	44.72	20.75	Picturetel Corp.	32.00	-0.88	-2.7
PTON	10.75	2.38	Proteon Inc.	2.88	0.13	4.5
RACO	7.63	3.50	Racotek Inc.	4.00	0.38	10.3
RETX	10.88	1.81	Retix	6.38	0.38	6.3
SBC	60.25	46.00	SBC Communications (L)	46.50	0.00	0.0
SFA	21.13	11.38	Scientific Atlanta Inc.	12.50	-1.00	-7.4
SHVA	87.25	21.13	Shiva Corp.	50.75	-0.25	-0.5
FON	45.50	29.25	Sprint Corp.	38.88	-1.63	-4.0
SMSC	23.50	10.25	Standard Microsystems Corp.	13.44	0.56	4.4
T8IT	13.88	2.38	Telebit Corp.	13.13	0.13	1.0
USRX	105.50	32.75	US Robotics	48.38	-4.38	-8.3
USW	48.38	27.88	U S West Inc.	27.88	-1.75	-5.9
XIRC	17.50	8.88	Xircom	12.63	-0.25	-1.9
XYLN	76.00	34.00	Xylan Corp.	42.25	0.00	0.0
PCs and Workstations						**OFF 2.24%**
AALR	10.38	5.88	Advanced Logic Research	7.88	-0.38	-4.5
AAPL	45.50	16.00	Apple Computer Inc.	22.94	-1.44	-5.9
ASTA	13.75	4.38	AST Research Inc.	5.00	-0.25	-4.8
CPQ	59.13	35.88	Compaq Computer Corp.	57.38	1.13	2.0
DELL	69.25	23.00	Dell Computer Corp. (H)	68.88	1.38	2.0
GATE	45.88	18.00	Gateway 2000 Inc. (H)	42.13	-2.88	-6.4
HWP	57.75	36.88	Hewlett Packard Co.	43.63	-0.38	-0.9
MUEI	29.88	8.75	Micron International Inc.	15.31	-0.69	-4.3
NIPNY	75.13	49.88	NEC America	53.25	-0.50	-0.9
SGI	42.88	20.00	Silicon Graphics	23.38	0.00	0.0
SUNW	67.13	26.38	Sun Microsystems Inc.	54.06	-0.56	-1.0
Large Systems						**OFF 1.03%**
AMH	13.50	6.75	Amdahl Corp.	9.38	-0.56	-5.7
DGN	19.13	8.88	Data General Corp.	10.63	-0.50	-4.5
DEC	76.50	30.50	Digital Equipment Corp.	38.38	-0.25	-0.6
I8M	128.88	83.13	IBM	115.50	1.13	1.0
MDCD	20.25	7.13	Meridian Data Inc.	8.63	0.00	0.0
NETF	7.25	2.75	NetFrame	2.81	-0.06	-2.2
SQNT	25.38	10.13	Sequent Computer Sys.	11.38	0.38	3.4
SEQS	8.50	1.88	Sequoia Systems Inc.	2.06	-0.19	-8.3
SRA	36.13	16.63	Stratus Computer Inc.	18.88	0.25	1.3
TDM	15.25	8.38	Tandem Computers Inc.	10.63	0.00	0.0
UIS	9.13	5.38	Unisys Corp.	6.13	0.25	4.3
Software						**OFF 0.24%**
ADBE	74.25	28.50	Adobe Systems Inc.	33.88	-1.50	-4.2
AMSWA	8.75	3.63	American Software Inc.	5.00	0.00	0.0
APLX	42.50	8.25	Applix Inc.	22.50	-2.38	-9.5
ARSW	82.75	28.75	Arbor Software	35.00	-6.00	-14.6
ADSK	50.00	18.50	Autodesk Inc.	22.25	-1.00	-4.3
BGSS	50.00	29.75	BGS Systems Inc.	44.63	-0.13	-0.3
8MCS	77.50	32.50	BMC Software Inc. (H)	77.50	2.75	3.7
BOOL	26.75	19.25	Boole and Babbage	24.00	-0.25	-1.0
8ORL	21.25	6.06	Borland Int'l Inc.	7.38	-0.19	-2.5
BOBJY	55.50	16.25	Business Objects (L)	16.75	-0.75	-4.3
CAYN	11.88	4.00	Cayenne Software Inc.	4.50	-0.50	-10.0
CYE	27.88	14.13	Cheyenne Software Inc.	18.75	0.00	0.0
COGNF	27.38	9.75	Cognos Inc.	24.00	0.50	2.1
CA	59.00	24.88	Computer Associates	53.25	-0.13	-0.2
CVN	15.50	5.75	Computervision Corp.	8.50	1.38	19.3
CPWR	46.00	15.50	Compuware Corp.	41.38	-1.63	-3.8
CSRE	32.00	10.75	Comshare Inc.	15.00	0.25	1.7
COSFF	19.13	8.25	Corel Corp.	10.44	0.94	9.9
DWTI	13.75	3.25	Dataware Technologies Inc.	3.75	-0.25	-6.3
FILE	67.00	20.00	Filenet Corp.	25.13	0.88	3.6
FRTE	81.75	24.75	Forte Software	27.00	-3.63	-11.8
DDDDF	8.00	3.56	4th Dimension	6.00	0.63	11.6
FTPS	40.63	5.88	FTP Software Inc.	7.50	-0.13	-1.6
GPTA	10.50	3.50	Gupta	4.25	-0.25	-5.6
HUM	28.88	15.00	Hummingbird Comm. Ltd.	19.88	1.00	5.3
HYSW	28.38	9.75	Hyperion Software Corp.	13.38	0.38	2.9
IRIC	16.25	10.00	Information Resources	12.75	0.13	1.0
IFMX	36.75	16.88	Informix Corp.	24.63	2.13	9.4
INGR	20.13	8.63	Intergraph Corp.	9.88	1.00	11.3
LEAF	12.63	2.88	Interleaf Inc.	2.88	-0.13	-4.2
ISLI	23.13	7.50	Intersolv Inc.	8.06	0.31	4.0
INTU	89.25	31.75	Intuit Inc.	32.50	-4.75	-12.8
LGWX	22.25	8.25	Logic Works	9.88	0.38	3.9
MAPS	24.00	7.50	MapInfo Corp.	10.25	-0.63	-5.7
MATH	9.25	4.63	MathSoft	6.75	0.00	0.0
MCAF	65.50	17.63	McAfee Associates	62.50	2.75	4.6
MENT	22.88	10.88	Mentor Graphics	13.25	-0.50	-3.6
MIFGY	21.25	8.25	Micro Focus	11.00	-0.13	-1.1
MGXI	18.63	9.19	Micrografx Inc.	10.75	-0.50	-4.4
MSFT	126.13	79.88	Microsoft Corp.	122.38	-0.88	-0.7
ORCL	42.13	23.38	Oracle Corp.	37.44	1.56	4.4
PMTC	49.50	25.88	Parametric Technology	47.13	1.63	3.6
PARQ	14.63	4.38	ParcPlace Systems Inc.	4.75	0.06	1.3
PSFT	79.75	33.88	Peoplesoft (H)	71.13	-5.38	-7.0
PTEC	20.38	9.88	Phoenix Technologies	16.63	-0.38	-2.2
PSQL	14.13	3.13	Platinum Software	9.75	0.13	1.3
PLAT	25.75	9.25	Platinum Technology	10.88	-0.13	-1.1
PRGS	38.00	12.13	Progress Software Corp.	16.50	0.19	1.1
RNBO	25.50	14.63	Rainbow Technologies Inc.	17.75	-0.38	-2.1
RED8	61.00	18.25	Red Brick Systems Inc.	20.00	-0.75	-3.6
ROSS	8.13	2.19	Ross Systems	4.88	-0.25	-4.9
SAPE	58.25	29.25	Sapient Corp.	41.50	-1.75	-4.0
SCOC	12.13	5.50	SCO Inc.	7.00	0.31	4.7
SDTI	109.00	19.75	Security Dynamics Tech.	65.75	-0.25	-0.4
SKEY	51.75	13.38	Softkey International Inc.	18.13	1.00	5.8
SPCO	5.13	1.19	Software Publishing Corp. (L)	1.50	0.13	9.1
SQAX	39.75	16.00	SQA Inc.	23.75	0.00	0.0
SOTA	19.75	8.63	State of the Art	14.25	-0.25	-1.7
SSW	81.38	40.00	Sterling Software Inc.	66.00	-1.88	-2.8
SDRC	37.38	15.00	Struct. Dynamics Research	24.00	-1.13	-4.5
SY8S	39.75	15.25	Sybase Inc. (L)	15.75	-0.31	-1.9
SYMC	33.25	8.75	Symantec Corp.	9.13	-0.63	-6.4
SNPS	46.75	23.00	SynOpsys	37.75	-0.25	-0.7
SSAX	30.63	8.25	System Software Assoc.	11.00	0.75	7.3
SYSF	33.25	4.38	Systemsoft Corp. (H)	33.25	1.63	5.1
TRUV	10.13	4.38	Truevision Corp.	4.88	0.00	0.0
VIEW	17.50	9.63	ViewLogic Systems	13.25	0.31	2.4
VMRK	19.25	5.75	VMark Software Inc.	7.75	-0.25	-3.1
WALK	12.75	6.25	Walker Interactive Systems	11.13	0.25	2.3
WALL	27.50	13.00	Wall Data Inc.	24.63	-0.13	-0.5
WANG	26.13	14.50	Wang Laboratories Inc.	17.50	0.00	0.0
Internet						**OFF 0.87%**
AMER	71.00	24.50	America On-Line	28.88	-1.63	-5.3
B8N	48.75	15.63	88N Corp.	17.75	-0.63	-3.4
CSRV	35.50	10.75	Compuserve Corp.	12.38	0.13	1.0
EDFY	55.75	16.25	Edify Corp.	24.25	0.75	3.2
LCOS	29.25	5.75	Lycos Inc.	7.75	1.06	15.9
NETC	91.50	16.00	Netcom On-Line	17.88	-1.50	-7.7
NSCP	87.00	22.88	Netscape Comm. Corp.	37.38	2.13	6.0
OMKT	42.25	13.25	Open Market Inc. (L)	14.00	0.13	0.9
PSIX	29.00	6.75	PSINet	10.63	-0.25	-2.3
QDEK	39.50	5.63	Quarterdeck Corp.	7.63	-0.25	-3.2
RAPT	39.25	15.00	Raptor Systems	16.25	-1.25	-7.1
SCUR	64.50	12.00	Secure Computing Corp.	12.00	-1.50	-11.1
SPYG	61.00	12.00	Spyglass Inc.	17.88	1.13	6.7
YHOO	43.00	15.50	Yahoo! Inc.	18.38	-1.13	-5.8
Semiconductors						**OFF 5.29%**
AMD	35.88	10.25	Advanced Micro Devices	12.25	-0.50	-3.9
ADI	30.13	17.00	Analog Devices Inc.	23.63	-0.38	-1.6
CHPS	15.88	7.88	Chips and Technologies	10.88	-0.13	-1.1
CRUS	61.13	12.63	Cirrus Logic	15.00	-0.50	-3.2
CY	25.75	9.13	Cypress Semiconductor Corp.	10.63	-1.13	-9.6
CYRX	49.75	12.50	Cyrix	13.13	-0.50	-3.7
INTC	83.25	49.81	Intel Corp.	81.81	1.81	2.3
LSI	62.50	17.00	LSI Logic Corp.	20.88	-1.13	-5.1
LSCC	42.50	19.75	Lattice Semiconductor	27.13	-1.19	-4.2
MCRL	32.50	12.00	Micrel Semiconductor Inc.	18.13	-0.13	-0.7
MU	94.75	16.63	Micron Technology	21.25	-1.50	-6.6
MOT	82.50	44.75	Motorola Inc.	52.25	-1.13	-2.1
NSM	33.63	13.00	National Semiconductor	17.75	-0.50	-2.7
TXN	83.75	40.50	Texas Instruments	44.88	-2.00	-4.3
VLSI	39.13	10.38	VLSI Technology	13.13	-0.63	-4.5
WDC	36.50	14.38	Western Digital Corp.	34.00	-1.00	-2.9
XLNX	55.50	23.25	Xilinx	33.00	-2.38	-6.7
ZLG	47.50	16.50	Zilog Inc.	16.50	-8.75	-34.7
Peripherals and Subsystems						**OFF 0.44%**
APCC	16.88	7.88	American Power Conversion	13.00	-0.88	-6.3
ADPT	61.50	35.00	Adaptec Inc.	47.50	-1.81	-3.7
CBEX	12.88	3.00	Cambex Corp.	3.38	0.25	8.0
CGN	7.25	3.38	Cognitronics Corp.	4.06	0.25	6.6
CREAF	14.13	3.50	Creative Technology Ltd.	3.75	-0.25	-6.3
RACE	8.38	3.63	Data Race Inc.	6.88	0.25	3.8
DTM	9.38	4.13	Dataram Corp.	7.13	-0.25	-3.4
EMC	23.38	13.00	EMC Corp.	19.38	0.13	0.6
EMLX	21.50	6.38	Emulex Corp.	13.25	-0.31	-2.3
ESCC	29.00	16.50	Evans and Sutherland	21.75	-1.25	-5.4
EXBT	22.75	10.00	Exabyte	13.75	-0.63	-4.3
IISLF	4.13	1.50	Intelligent Info. Systems	1.88	0.00	0.0
IOMG	55.13	2.75	Iomega Corp.	14.00	-0.81	-5.5
IPLS	8.25	1.88	IPL Systems Inc.	2.13	0.06	3.0
KMAG	37.50	17.63	Komag Inc.	19.50	-1.75	-8.2
MTSI	22.25	11.25	Micro Touch Systems Inc.	15.38	1.38	9.8
PEAK	34.75	17.25	Peak Technology Group	20.50	-2.00	-8.9
PNCL	19.75	4.88	Pinnacle Micro Inc.	7.75	0.38	5.1
AQM	6.75	3.25	QMS Inc.	5.13	0.00	0.0
QNTM	26.63	10.88	Quantum Corp.	15.50	0.00	0.0
RDUSC	8.75	0.94	Radius Inc.	1.69	0.06	3.8
SEG	67.75	36.13	Seagate Technology	47.00	-0.63	-1.3
STK	44.13	21.75	Storage Technology	36.75	-0.63	-1.7
STLC	8.75	1.25	Streamlogic Corp.	2.88	0.06	2.2
TEK	61.88	29.75	Tektronix Inc.	38.13	-0.75	-1.9
XRX	57.50	39.88	Xerox Corp. (H)	57.50	2.63	4.8
Services						**UP 1.28%**
AMSY	33.38	15.38	American Mgmt. Systems	27.00	1.75	6.9
ANLY	43.75	27.25	Analysts Int'l	41.50	5.00	13.7
AUD	43.38	32.13	Auto Data Processing	42.00	0.50	1.2
CATP	30.75	13.00	Cambridge Tech. Partners	29.13	0.94	3.3
CEN	54.88	36.63	Ceridian Corp.	44.75	2.25	5.3
CDO	28.63	18.88	Comdisco Inc.	26.75	0.50	1.9
CHRZ	54.00	11.63	Computer Horizons	24.88	1.13	4.7
CSC	80.75	59.75	Computer Sciences	71.25	1.88	2.7
TSK	31.88	13.25	Computer Task Group	28.13	-0.63	-2.2
CPU	48.75	12.88	CompUSA Inc.	44.25	4.25	10.6
CDAT	27.50	9.38	Control Data Systems Inc.	20.13	1.69	9.2
EGGS	13.88	5.00	Egghead Discount Software	7.75	-0.38	-4.6
EDS	58.63	43.88	Electronic Data Systems Corp.	55.38	0.63	1.1
INAC	28.13	9.13	Inacom Corp. (H)	28.13	1.50	5.6
INEL	11.50	3.50	Intelligent Electronics	7.13	0.00	0.0
KEA	47.75	18.25	Keane Inc. (H)	42.63	-2.63	-5.8
MSEL	7.50	2.13	Merisel (L)	2.25	-0.75	-25.0
MICA	16.25	7.25	Microage Inc.	15.13	0.50	3.4
PAYX	56.00	26.63	Paychex	52.50	-1.44	-2.7
PMS	55.50	35.13	Policy Management Sys. (L)	36.75	1.25	3.5
REY	54.50	31.88	Reynolds and Reynolds	48.63	-1.25	-2.5
SCBI	30.50	14.44	SC8 Computer Tech. Inc.	18.75	0.50	2.7
SEIC	26.38	17.75	SEI Corp.	21.13	-0.50	-2.3
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SNDT	44.50	25.25	Sungard Data Systems	42.25	-0.13	-0.3

KEY: (H) = New annual high reached in period (L) = New annual low reached in period

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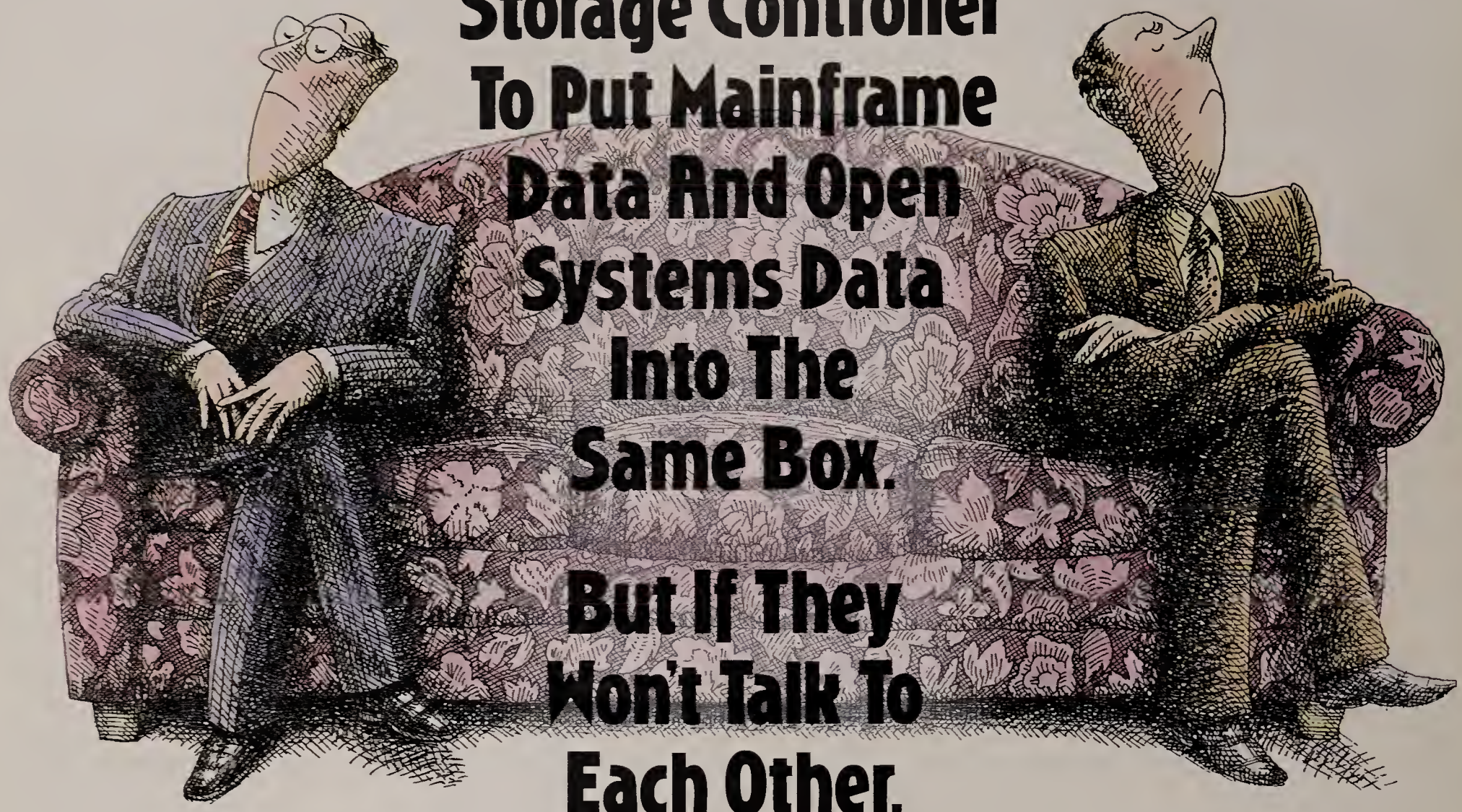

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Directory blocks NT moves

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"Comparing NT Server's domain directory to [NDS] is like comparing a wheelbarrow to a dump truck."

Microsoft won't have a full enterprise directory services product until that part of the Cairo framework ships late next year.

Other users such as Sean Gilbert, MIS manager at Cardservice International, Inc., a transaction services provider in Agoura Hills, Calif., have firmly settled on a dual strategy with NetWare as the primary network operating system and NT Server as the lead database application.

"NDS is a major advantage for NetWare. It gives us unparalleled file- and system-level security. We can't currently duplicate that level of functionality with Windows NT Server," Gilbert said.

EDS' Wayne Stein: *Choosing NT over NetWare will save money*

Craig Restle, president of Systron, Inc., a New York-based systems integrator that sells NetWare and Windows NT Server, said there is "no question" that Microsoft's marketing muscle and worldwide brand-name recognition are having an impact and making inroads into Novell's and other competitors' market share. "It's equally true that with NetWare 4.11, Novell is bringing a lot more functionality to the table. This has made many users who were planning a wholesale migration away from NetWare a year ago stop, take stock and say, 'Wait, I've got a huge investment in NetWare. What do I gain by ripping it out and switching to NT Server?'" Restle said.

Systron has more than a dozen clients, each of which supports 5,000 or more end users. "So far, only two of them are committed to going all-NT Server," he said.

Windows NT Server and NetWare offer some key lures for users

NetWare's advantages:
Novell Directory Services offers enterprise management and scalability
An installed base of 60% that is heavily invested in NetWare
A head start in penetrating the market for global services
Allies and users who fear an all-Microsoft world

Windows NT Server's advantages:
Microsoft's domination of the desktop
Application server strength
Strong relations with developers
Marketing muscle

Novell has lost very little ground to NT Server at the enterprise level, said Lee Doyle, an analyst at International Data Corp. (IDC) in Framingham, Mass. A recent IDC survey of 985 U.S. corporate sites showed that nearly 60% are still committed to NetWare as their primary network operating system.

The continued unavailability of the Cairo set of advanced directory services for Windows NT has caused many NT Server enthusiasts, including parts of Chevron Corp., to rethink initial plans for a mass migration to the platform.

But NT Server still has staunch supporters. Wayne Stein, project manager for GM Access at Electronic Data Systems Corp. in Detroit, said it was the operating system of choice when General Motors Corp. decided to link 8,500 car dealerships nationwide.

"We are building the foundation for all future development, [and] the feeling here is that Windows NT Server is the [network operating system] of the future," Stein said. "NetWare is very strong in a centralized environment. But it would have cost us 25% to 30% more in extra components to implement a NetWare database server."

Indeed, users said that if NT Server offered directory services equal to NDS or Banyan Systems, Inc.'s StreetTalk, they would consider an all-Microsoft network. But, Gilbert said, "the bottom line is, I can't build my network on promises."

Domain structure limits NT Server

Windows NT Server incorporates a domain directory structure that will let multiple servers share one list of users. It also gives end users a single log-on to their local domain file and application servers and provides a process to establish "trust" relationships among disparate servers.

"[But] this is a very labor-intensive and limiting process. If you've got dozens of domains or groups of servers, the administrator ends up with hundreds of trust connections to keep track of — it's a nightmare that would consume all of a network administrator's time," said Mark Minasi, president of Tech Teach International, a training and consulting firm in Arlington, Va.

By contrast, Novell Directory Services (NDS) will let businesses create a hierarchical database directory that graphically displays every user, object and device on the network from a central location.

Microsoft has promised NDS-like functionality in Cairo directory services.

No firm date has been set for Cairo's release, but it is expected to ship in the second half of next year.

— Laura DiDio

Intranets

CONTINUED FROM PAGE 1

ments, pocket pagers and other mechanisms. It will cost $5,000.

- **Firefly Network, Inc.** in Cambridge, Mass., is scheduled to ship three products aimed at automatically funneling data to user E-mail accounts.
- **First Floor, Inc.** in Mountain View, Calif., plans to ship InfoPilot this month. The product sends updates and changes to corporate data based on predefined user profiles and access privileges. It will cost $3,375 for a server module and 25 user licenses.

Easing the process

Sending data out to users will "prevent a lot of frustration," said Dan Fine, CEO of Fine.com Interactive, a Web consulting firm in Seattle.

Faced with a giant intranet of thousands of pages, "you don't know where to start but at the same time feel you're missing out," said Fine, who has developed intranets for real estate company Windermere Services Co. in Seattle and Microsoft Corp. in Redmond, among others.

Sandia National Laboratory knows that scene well. It was on to the push idea soon after it started its 8,000-user intranet two years ago.

"We learned from experience — the experience of our users telling us when they couldn't find things," said Fran Current, Internet technologies project leader at Sandia in Albuquerque, N.M.

But none of these utilities existed back then. The lab wrote its own Common Gateway Interface and Perl scripts to offer users various subscription services.

"When you have a 100,000-page intranet, finding just what you want can be pretty difficult. We have conscientiously tried to make it easier," Current said.

Intelligent agents

When users aren't pointing and clicking aimlessly for crucial data, networks aren't as clogged, said Karen Isaacson, associate director of human resources information systems at Kraft General Foods Corp. in Northfield, Ill.

Good design can direct user traffic, which Kraft learned after building an intranet prototype this year. "Some [of our] pages are confusing and hard to navigate. Users don't know to scroll or to click," she explained. "That doesn't make for happy users."

Marcam upgrades object-oriented manufacturing software line

By Tim Ouellette

Marcam Corp. this week will continue to eke out improvements to its Protean object-oriented manufacturing software.

Marcam, which competes with software giants such as SAP AG, pioneered the effort to deliver a fully object-oriented line of client/server applications in 1994. But product rollout has been slow, and the company still needs to deliver several modules.

Benefits apparent

Still, Protean users said they are experiencing gains over legacy systems, even while they take the object slow boat. The benefits include lower training costs and faster installation and customization.

"We really like seeing benefits already, without a full implementation of all modules, which we didn't expect," said Bill Friend, group vice president at J. R. Simplot, Inc.

Most users that attempt a client/server installation with competing software try to do it all at once to make sure everything integrates well. Protean 2.0 will add two modules — Plant Planning and Quick Scheduler — and provide full support for Microsoft Corp.'s OLE automation. Protean prices range from $4,000 to $8,000 per seat.

The OLE and object support make it possible to put all the relevant work on one Windows screen, so employees don't have to navigate multiple, character-based application screens as they did in the past.

Although traditional client/server installations have required a large investment in training, users need only six hours of Windows training and six hours of Protean training to get up to speed on the software, Friend said.

"Objects is the direction everyone is heading, but it is not easy, or Marcam would have it done by now," said Bruce Richardson, vice president of research at Advanced Manufacturing Research, Inc. in Boston. "As a result, we are going to see a lot more focus on partnerships" to fill product gaps.

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David Coursey

When bad companies happen to good people

Bob Frankenberg is a great guy — which is exactly why he failed to get the mess at Novell straightened out. Instead of, as we Texans are prone to say, kickin' butt and takin' names, Frankenberg tried to find consensus and create the sort of collegial atmosphere he enjoyed at Hewlett-Packard. He failed rather miserably.

What Frankenberg should have done is cleaned house — replacing the Novell executive mob with people from WordPerfect, which Novell acquired just after Frankenberg arrived. The WordPerfect executives loved Bob and would have been happy to do his bidding throughout Novell. Unfortunately, Frankenberg cozied up to the existing Novell management, and most of the WordPerfect people left.

It's sad, but Novell is about as collegial as your average state prison, with the same sort of fighting among the product groups that you might find among gangs at San Quentin. And there's the battle between Utah and San Jose for control of the company. Ultimately, Novell's corporate culture — culture as in the sort of thing your doctor wants before prescribing antibiotics — is what beat down Frankenberg. He really deserved better.

With Frankenberg out, Novell's board is off doing exactly the wrong thing again. Last time, it decided to hire an Eagle Scout for a gang lord's job. Now, it's trying to replace the Nice Guy with God only knows.

Here's my advice to the board of directors:

Don't hire another CEO — put yourself on the block while you still can. There are several companies that might buy you; after all you're cheap. The value of all your stock is in the $3.5 billion-range and you have a billion dollars in the bank. What a deal! Someone can buy Novell and get enough cash-on-hand to run the company long enough to fix the problems.

But who's the lucky buyer? IBM is out on general principle, Microsoft is out on legal principle, and Hewlett-Packard is out because of the Frankenberg Principle — if he couldn't do it, which of the rest of them can?

Netscape could make the deal fly, and CEO Jim Barksdale just might be able to whip Novell into shape. But why would he want to? 3Com is a possibility, as is Cisco. Or maybe even Electronic Data Systems, which might find the idea of the Novell channel intriguing. If Oracle's Larry Ellison really wants to duke it out with archrival Bill Gates, Novell would give him the opportunity.

Tough-guy Larry might be able to turn Novell around. And then there's always Computer Associates, the big, dark bird that is making slow circles in the sky, waiting to swoop down for a piece of roadkill.

Novell shouldn't have to die — it still has very good market share, lots of fans, decent goodwill and an excellent reseller channel. But without real leadership and, probably, a new owner, Big Red will end up Big Dead.

Coursey's poetic license has been suspended. When not expressing his primal angst on this page, he can be found at www.coursey.com, home of his electronic industry newsletter, or write him at david@coursey.com.

Charles Babcock

Microsoft creeps into the enterprise

Is Microsoft ready to supply enterprise systems?

Before answering yes, IS managers must consider Microsoft's many shortcomings. Its NT Server lacks full directory services, NT doesn't scale up as far as many host systems need to go, and it's hard to design an NT network with both a single user log-on and secure administration across domains. In the short run, the answer is no, Microsoft isn't ready.

But in the long run, the answer probably doesn't matter.

Microsoft is still in step with the desktop revolution. It is assembling the right technologies to dominate several layers upward in the organization. It can easily provide for a workgroup or department today and a division tomorrow. I think the way Microsoft is driving NT's modern, modular design tells us that, yes, it will be supplying enterprise systems in the foreseeable future.

Those who claim Microsoft and NT have been left behind by a shift to network computing don't understand how quickly Microsoft has converted itself into a network-oriented company.

Nine months after public attention shifted from Windows 95 to the Internet, Microsoft is providing conversion tools that adapt its applications to the World Wide Web.

Even if others do it better, Microsoft has allowed its customers and legions of third-party developers to remain in step with the Internet.

But even more important than this shift is Microsoft's continued development of Windows NT, which gives the company legitimacy in its pursuit of the enterprise mantle.

G. Pascal Zachary, a *Wall Street Journal* reporter who wrote about the development of NT for the *Journal* and in a book, *Show Stopper*, says NT's 6.1 million lines of code were the result of an intense internal debate.

Windows 95 advocates said NT shouldn't be a desktop system, as originally planned, but should be a higher-level server system.

David Cutler, who led the NT project, had many big operating system ideas, gleaned from his work on the Digital Prism project. In 1985, Digital wanted a replacement architecture for the VAX and put Cutler in charge of the project. It was later abandoned when Digital opted for Unix. But Cutler cherished a competitive desktop role for NT as well.

The result is that NT can serve as both and — along with IBM's OS/2 — is one of the few microkernel-based operating systems that can do so.

Standard PC hardware has almost caught up with what it takes to run NT Workstation, while eight-way, 500-MHz Pentium Pro units will be running symmetrical multiprocessing NT Server at high speeds within two years.

At the Windows NT Intranet Solutions Conference held recently in San Francisco, bitter Microsoft competitors Steve Jobs of Next Software and Bill Reedy of IBM's Large Scale Computing Division urged their respective audiences to use Next and IBM products under NT. "IBM isn't trying to argue with the marketplace," Reedy said.

It was a telling moment because only IBM has done what Microsoft aspires to do. Microsoft wants to set the enterprise environment and let others follow.

Because of its dual desktop/server roles, its product line is becoming an intranet supply line, and in the background is the sound of marching feet.

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RICK ENGLISH PICTURES

New-wave Macs. *The Macintosh always stood for leading-edge design and usability, but in recent years rivals have caught up. So* Macworld *magazine (www.macworld.com) and Frogdesign dreamed up two provocative prototypes to help nudge Apple Computer out of its design slump. In theory, the futuristic designs — a desktop Macintosh on the left and a laptop on the right — could be produced as early as next summer, the designers said.*

alt.cw

Patent watch

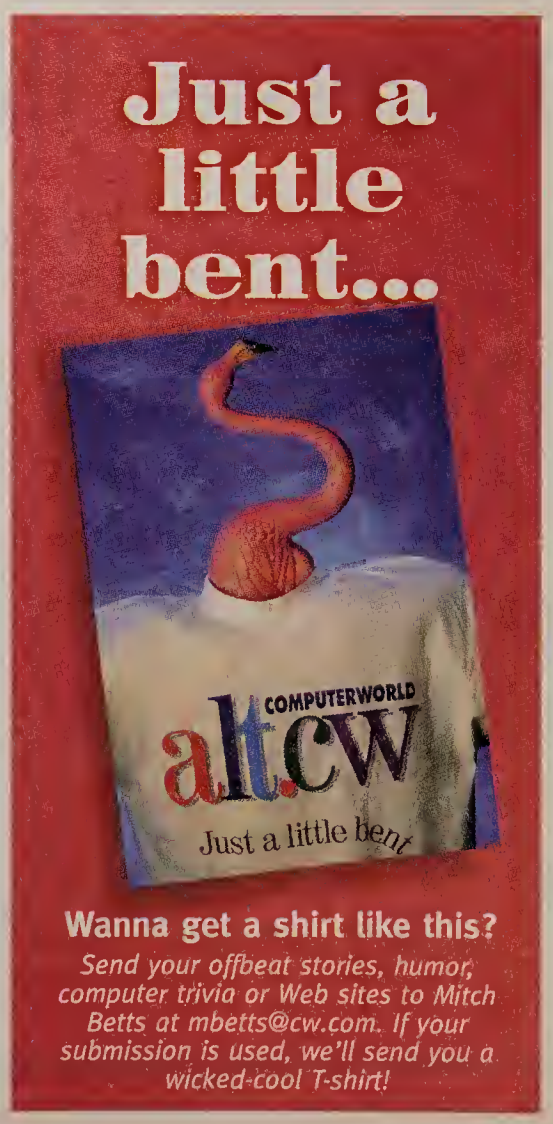
These recently issued U.S. patents were gleaned from MicroPatent's Patent Server at www.micropat.com. (Patent number, inventor/assignee, date issued)

A mobile nursing cart. In addition to carrying medical supplies, the cart has a mobile PC for bedside record-keeping and wireless transmissions to a host computer. (5,536,084, Grandview Hospital and Medical Center, July 16)

A car-collision-avoidance system run by a neural network. The system is trained to predict crashes and then warns the driver or automatically takes evasive action. (5,541,590, Takata Corp., July 30)

A method for storing 11-digit floating-point numbers in an encoded, compressed format. This is more convenient for spreadsheet users who need only three or four digits. It reduces memory requirements by 50%. (5,542,068, Microsoft, July 30)

A secure method for renting software. The remote user downloads the software from a host computer and uses it while maintaining a communications link with the host. To prevent copying, the software application has an embedded security module that disables the software if the communications link is broken. (5,548,357, Mohan Ananda, Aug. 20)



Inside Lines

Vanity affair

In an effort to spice up its image, Genesis Technology Group, Inc. recently signed Denise K. Smith as director of public relations. Smith, better known as Vanity — the former singer/actress/model who hung around with the artist formerly known as Prince — might end up following the advice from her mid-1980s songs, such as "If a Girl Answers (Don't Hang Up)" or "Drive Me Wild," to add pizzazz to the Reston, Va.-based computer systems company.

DEC knows marketing

Digital is getting ready to launch a new advertising campaign. According to the newsletter "Shannon Knows DEC," several prototypes were ruled out, including one that portrayed Network, Sun's spokeshound, and urged customers to "buy an Alpha, or we'll shoot the dog." Another aimed at IBM noted that while solutions for a small planet were all well and good, Digital would rather focus on a planet the size of Earth.

Fashionable Web site

New York's Fashion District this week will unveil an Internet-based interactive kiosk that industry visitors can use to locate Big Apple retailers and make appointments. The interactive kiosk and a Fashion District Web site (www.fashioncenter.com) will be hard to miss. The octagonal structure at the corner of 39th Street and 7th Avenue will sport "the world's largest button" held aloft by a 31-foot steel needle.

Sprinting to Spectrum

The outsourcing arm of Sprint Corp. in Westwood, Kan., plans to manage customers' networks through Spectrum, Cabletron's distributed platform. A leak from Cabletron in Rochester, N.H., described plans to blare Spectrum's win over Hewlett-Packard Co.'s market-leading OpenView at Networld/Interop '96 next week in Atlanta.

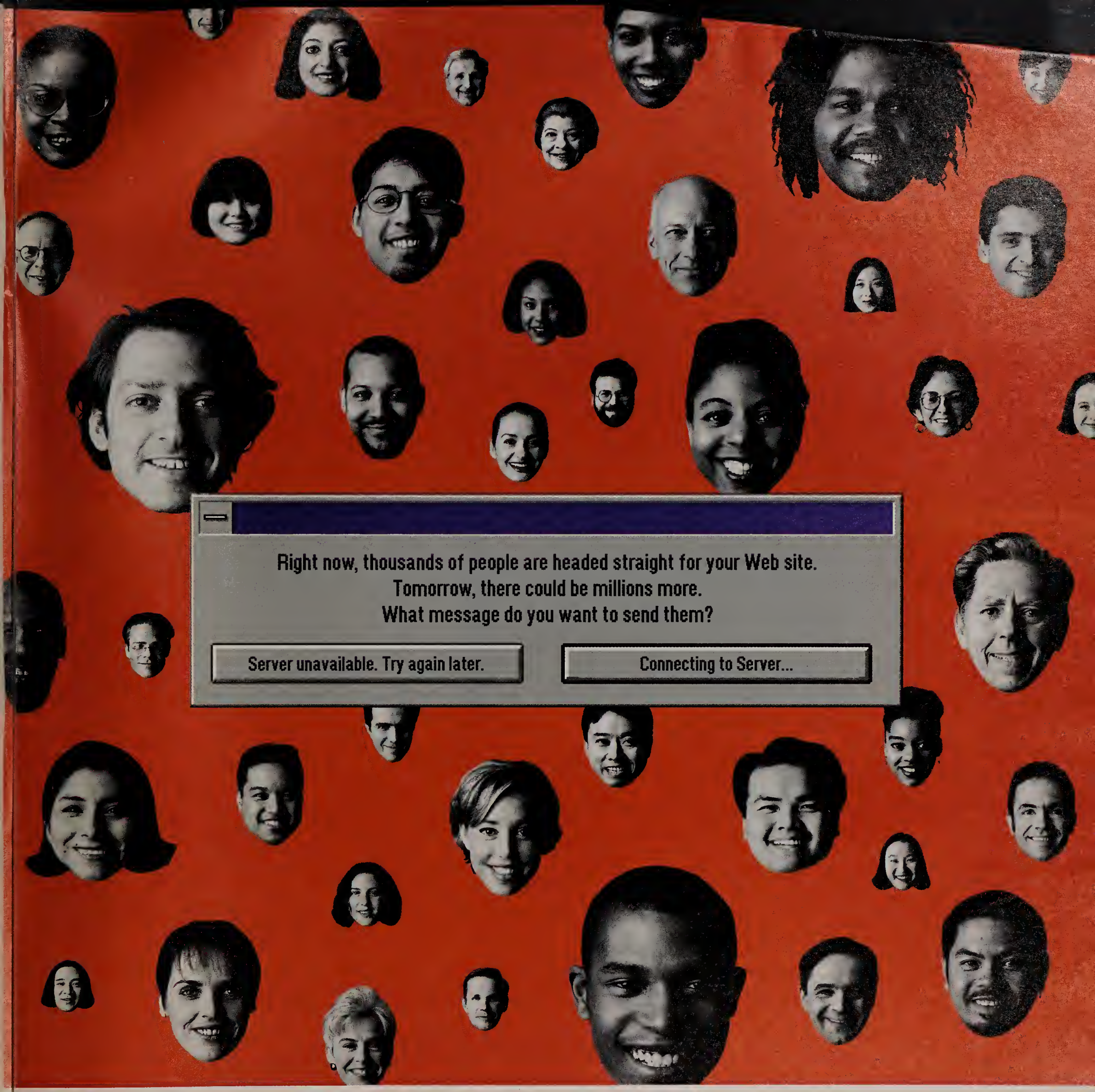
Frat houses of the rich and famous

While Microsoft billionaire Bill Gates is still crafting his dream house, co-founder Paul Allen built the frat house of the future. For $3.1 million, Allen replaced the Phi Kappa Theta house at Washington State University, his college home in the early 1970s. The four-story brick house boasts a computer center and climate-controlled bedrooms jacked for voice, data and cable TV.

Powerful jokesters

Power Computing Corp. is one of the most outspoken boosters of the Macintosh flag. Power Computing's high-altitude antics (they had a 225-foot bungie tower at Macworld Expo in Boston) have included T-shirts distributed at Macworld that said "Let's Kick Intel's Ass" and another T-shirt proclaiming multimedia as the domain of the Macintosh. At Macworld Expo in January, Power Computing will sponsor MacFest, which reportedly will feature headliners Green Day and Lyle Lovett. U2, singer Peter Gabriel and comedian Robin Williams are also on the list but aren't yet confirmed. The show is free, but you have to attend Macworld to get a ticket. Now that's one way to boost show attendance.

The Internet's first beauty pageant is under way. The owner of a Budapest computer company is sponsoring the Miss Cyberspace Hungary contest at www.datanet.hu/artnet/beauty. Contestants send photos for scanning and posting; visitors judge the images; and winners continue to a final round in December. Virtual beauty may be in the eye of the browser, but Computerworld *news editor Patricia Keefe will judge your tips at (508) 820-8183. Or send your news (no digitized photos, please) to patricia_keefe@cw.com.*



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